

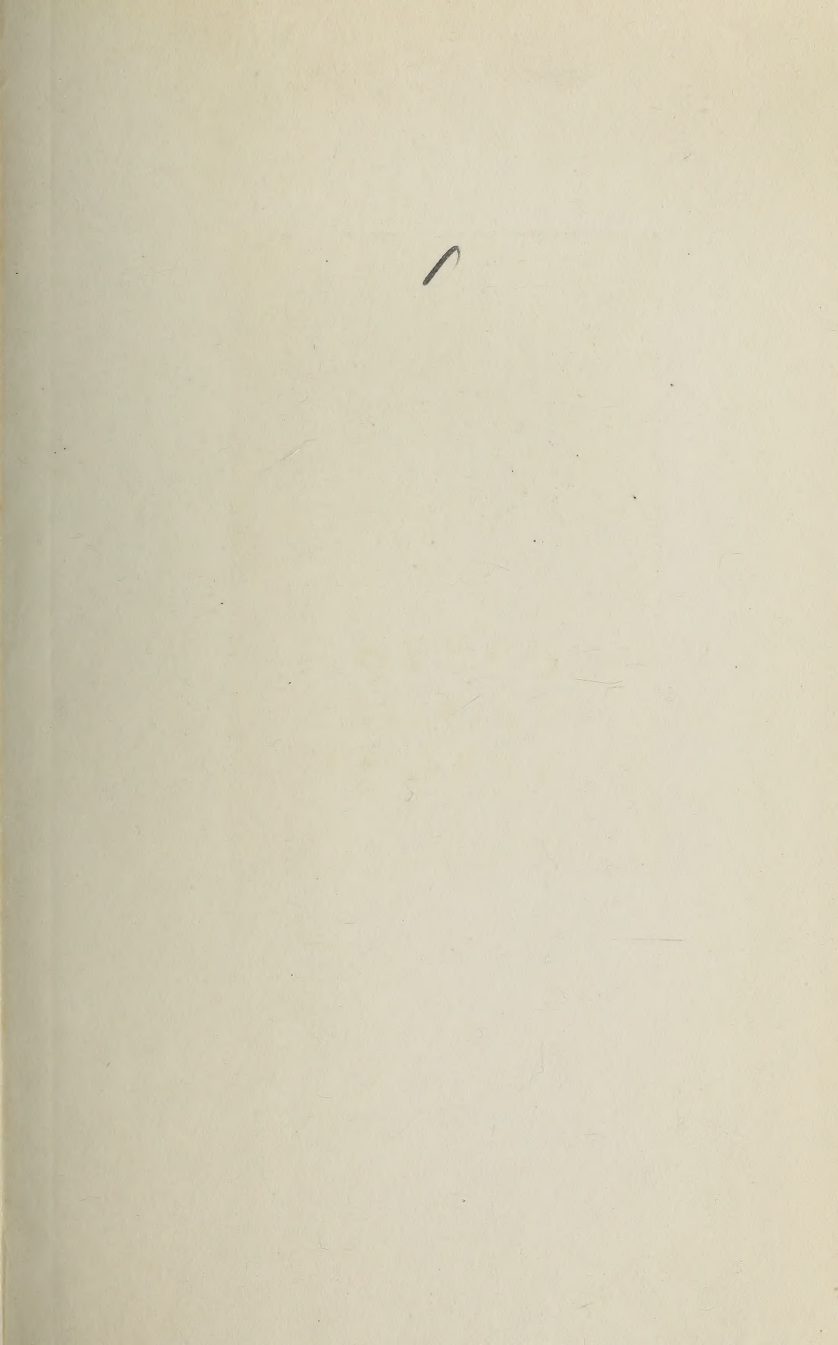




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# Bucknell University Bulletin.

Published Bi-monthly by the Bucknell University,  
Lewisburg, Pennsylvania.

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EIGHTEENTH SERIES      JANUARY, 1919      No. 4

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## CATALOG

### 1918-1919



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THE  
SIXTY-NINTH CATALOG  
OF THE  
OFFICERS AND STUDENTS  
OF  
**Bucknell University:**

COLLEGE OF LIBERAL ARTS

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FOR THE YEAR 1918-1919

# BUCKNELL UNIVERSITY

Founded, 1846

## Presidents of the University.

1846-51 Stephen W. Taylor, LL.D.

1851-57 Howard Malcom, D.D., LL.D.

1858-79 Justin Rolph Loomis, Ph.D., LL.D.

1879-88 David Jayne Hill, LL.D.

1889 John Howard Harris, Ph.D., LL.D.

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## CALENDAR

The Winter Term Ends.....Wednesday, March 19, 1919

The Spring Term Begins.....Wednesday, March 26, 1919

Annual Commencement .....Tuesday, June 24, 1919

Summer School Begins.....Tuesday, July 1, 1919

The Fall Term Begins.....Thursday, September 18, 1919

The Fall Term Ends.....Thursday, December 18, 1919

The Winter Term Begins.....Tuesday, January 6, 1920

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BUCKNELL COLORS: Orange and Blue.

BUCKNELL YELL: Yah, yah, yoo! Bucknell B. U.!

Wah, hoo, hoo wah, Bang!



## PLAN AND PURPOSE OF THE UNIVERSITY.

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### CORPORATE RIGHTS.

The University was incorporated with full university powers by the Legislature of Pennsylvania, in an Act approved by the Governor on the fifth day of February, 1846. The management of the University is committed to a Board of Trustees, which is self-perpetuating. The trustees are prohibited, for any cause or under any pretext whatever, from encumbering by mortgage or otherwise the real estate or any other property of the institution. It is required by charter that no religious sentiments are to be counted a disability to hinder the election of an individual to any office among the teachers of the institution, or to debar persons from attendance as pupils, or in any manner to abridge their privileges or immunities as students in any department of the University.

### BENEFACTORS OF BUCKNELL UNIVERSITY.

The total property of the Institution exceeds one million dollars. The productive investment amounts to over eight hundred thousand dollars. All this property has been given by friends of education, numbering several thousand persons. FOUNDERS of the Institution, that is, Benefactors who have given ten thousand dollars or more have been: DAVID JAYNE, JOHN PRICE CROZER, WILLIAM BUCKNELL, SAMUEL ALDRICH CROZER, HARRY SAMUEL HOPPER, HARRIET BUCKNELL HOPPER, JOHN D. ROCKEFELLER, CATHARINE A. WENTZ, CHARLES MILLER, JOHN J. CARTER, HENRY KIRKE PORTER, DAVID PORTER LEAS, ANDREW CARNEGIE, LOUISE BUCKNELL LITTLE, JOSEPH KERR WEAVER.

PATRONS (those who have given one thousand dollars or more, but less than ten thousand) have been: CHARLES F. ABBOTT, RALPH A. AMERMAN, E. A. ARMSTRONG, FRANCIS W. AYER, BENJAMIN BEAR, WILLIAM P. BEAVER, MARTIN BELL, EMMA W. BUCKNELL, WASHINGTON BUTCHER, SIMON CAMERON, LEVI B. CHRIST, ELISHA A. CORAY, WILLIAM J. COXEY, NETTIE DUNHAM CRARY, SAMUEL J. CRESWELL, GEORGE K. CROZER, J. LEWIS CROZER, MRS. J. LEWIS CROZER, ROBERT H. CROZER, JOHN C. DAVIS, THOMAS Y. ENGLAND, ISAAC FORD, MRS. ISAAC FORD, BENJAMIN GARTSIDE, MARY W. GETTER, THOMAS A. GILL, LEROY GLEASON, CALVIN GREEN, BENJAMIN GRIFFITH, CALVIN A. HARE, JOHN H. HARRIS, GEORGE HYDE, JAMES IRVING, ISRAEL JAMES, E. C. JAYNE, ADAM JOHNSTON, JOHN D. JOHNSON, WILLIAM W. KEEN, WILLIAM B. LEAS, ALEXANDER M. LLOYD, JUSTIN R. LOOMIS, FREEMAN LOOMIS, WILLIAM H. LUDWIG, J. C. MCKINNEY, S. E. MCVITTY, JOSEPH MEIXELL, GEORGE BARRON MILLER, GEORGE F. MILLER, JAMES MOORE, JAMES MOORE, JR., H. J. MULFORD, JACOB G. NEAFIE, CHRISTIAN OVERHOLT, A. C. OVERHOLT, MARIA OVERHOLT, GEORGE PORTER, JACOB REESE, A. J. ROWLAND, J. C. SIBLEY, GEORGE M. SPRATT, ORLANDO W. SPRATT, W. H. STARBUCK, AMOS B. STILL, JAMES B. STEPHENSON, JOHN B. STETSON, JAMES S. SWARTZ, FRANCIS J. TORRANCE, ERNEST L. TUSTIN, N. STEWART WALL, CHARLES S. WALTON, MARTHA ENGLAND WALTON, THOMAS WATTSON, SAMUEL WOLF, SIMON P. WOLVERTON, S. D. YOUNG.

By act of the Board of Trustees, the names of Founders and Patrons will be given in the Annual Catalog of the University forever.

### THE MILLION-DOLLAR MOVEMENT.

The Board of Trustees has authorized an effort to increase the endowment by one million dollars. It is expected to obtain this sum by gifts and legacies.

## FORMS OF GIFTS.

To persons wishing to give money for the education of the young, the following forms of beneficence are suggested:

(a) Departments can be endowed for \$100,000 and upward.

(b) Professorships can be endowed for \$50,000 each.

(c) Fellowships can be endowed for \$10,000 and upward, each.

(d) Scholarships can be endowed by a gift of \$1,000 to \$5,000 each, the income to be given toward the expenses of the student. The income is estimated from the average income of the funds of the Institution, and is applied only in the year in which it falls due.

(e) Additions can be made to the Loan Fund which has been established. The interest from this is loaned to students, the principal being kept intact. In this way a large active loan fund accumulates.

(f) A fund for the Retirement of Professors who, after long service, have, through age or infirmity, become unable to render further efficient service.

Each of these forms of beneficence will bear and perpetuate the name of the donor or of the person designated by him.



## FORM OF BEQUEST.

To persons desiring to aid in increasing the efficiency of the schools in their work of preparing young men and young women for usefulness, the following form of bequest is recommended:

*I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of.....Dollars for the general purpose of said school, according to the Act of Assembly incorporating the same.*

Or if for a special purpose:

*I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of.....Dollars for the establishment of a department, professorship, fellowship, scholarship, loan fund, or retirement fund, to bear and perpetuate the name of.....forever.*

## CONDITIONAL GIFTS.

Gifts will be accepted by the University conditional upon the payment of an annuity to the donor during life.

## ORGANIZATION.

I. **THE COLLEGE** offers ten Courses of study, each of four years, and each leading to the appropriate degree:

1. The Classical Course.
2. The Philosophical Course.
3. The Course in Jurisprudence and Finance.
4. The Course in General Science.
5. The Course in Household Economics.
6. The Course in Biology.
7. The Course in Chemical Engineering.
8. The Course in Civil Engineering.
9. The Course in Electrical Engineering.
10. The Course in Mechanical Engineering.

II. **THE DEPARTMENT OF MUSIC** has full Courses in instrumental and vocal music, and grants diplomas to those who complete any of the specified Courses.

## THE BOARD OF TRUSTEES

---

CHAIRMAN, JAMES S. SWARTZ, A.M.,

11 Broadway, New York City.

SECRETARY, A. JUDSON ROWLAND, D.D., LL.D.,

1701 Chestnut Street, Philadelphia.

TREASURER, HON. HAROLD M. McCLURE, A.M.,

Lewisburg, Pa.

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RALPH A. AMERMAN, Esq.

HON. J. WARREN DAVIS, A.M.

PRES. MILTON G. EVANS, D.D.

PRES. JOHN H. HARRIS, LL.D.

HARRY B. HOPPER, A.B.,

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MR. JOHN D. JOHNSON,

LEROY P. LEAS,

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GEN. CHARLES MILLER, A.M.

GEORGE M. PHILIPS, PH.D., LL.D.

A. JUDSON ROWLAND, D.D., LL.D.

HON. JOSEPH C. SIBLEY, LL.D.

LEROY STEPHENS, D.D.

JAMES S. SWARTZ, A.M.

\*HON. F. J. TORRANCE, A.M.

HON. ERNEST L. TUSTIN, LL.D.

JOSEPH K. WEAVER, A.M., M.D.

S. LEWIS ZIEGLER, M.D., LL.D.

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## MEETINGS OF THE BOARD.

The annual meeting is held on Tuesday of Commencement Week, at Lewisburg.

The semi-annual meeting is held on the second Thursday in January in Philadelphia.

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\* Deceased.



## COMMITTEES OF THE BOARD.

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### COMMITTEE ON INSTRUCTION.

A. JUDSON ROWLAND, D.D., LL.D., *Chairman.*

MILTON G. EVANS, D.D., LL.D.      LINCOLN HULLEY, LL.D.  
LEROY STEPHENS, D.D.      HON. ERNEST L. TUSTIN, LL.D.  
GEORGE M. PHILIPS, PH.D., LL.D.      RALPH A. AMERMAN,  
AND THE PRESIDENT.

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### COMMITTEE ON FINANCE.

JAMES S. SWARTZ, A.M., *Chairman.*

HON. J. WARREN DAVIS, A.M.      HARRY BOARDMAN HOPPER, A.B.  
HON. JOSEPH C. SIBLEY, LL.D.      JOSEPH K. WEAVER, M.D.  
HON. FRANCIS J. TORRANCE, A.M.  
AND THE PRESIDENT.

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### COMMITTEE ON LIBRARY AND BUILDINGS.

HON. HAROLD M. MCCLURE, A.M., *Chairman.*

GEN. CHARLES MILLER, A.M.      PRES. JOHN H. HARRIS, LL.D.  
S. LEWIS ZIEGLER, M.D., LL.D.

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### COMMITTEE ON PUBLICATION.

LEROY STEPHENS, D.D., *Chairman.*

MILTON G. EVANS, D.D., LL.D.  
AND THE PRESIDENT.

## THE UNIVERSITY PROPERTY.

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### I. THE MAIN COLLEGE.

The main College building is situated on a hill one hundred feet above the Susquehanna River, and overlooks scenery of unsurpassed beauty. It was designed by Thomas U. Walter, LL.D., architect of the dome and wings of the Capitol at Washington, D. C., and is in the Grecian style, combining dignity and simplicity. The building has a façade of three hundred and twenty feet. The central portion is eighty feet square, and is strengthened in front by four massive columns. On the first floor are six recitation rooms. On the second floor are the halls of the Theta Alpha and Euepia Literary Societies, Museum of Natural History and Recitation rooms.

In the third story is Commencement Hall, with a seating capacity of fifteen hundred.

The wings on the eastern and western sides, respectively, of the Main Building, are each one hundred and twenty feet in length and four stories in height, and are used for students' rooms, and for recitation rooms and offices.

### II. THE WEST COLLEGE.

The West College was erected in the year 1900. It is constructed of brick, four stories in height, trimmed with brownstone, and contains ninety-seven rooms, one of which is a hall for the use of the Young Men's Christian Association, and the others are designed for the residence of students.

### III. THE EAST COLLEGE.

The East College is a building of brick, trimmed with brownstone. The first story is assigned to the Electrical Laboratory and Physical Laboratory, with a floor surface of some thirty-five hundred square feet, and to recitation rooms. The attic story with a floor surface of some six thousand square feet is used for draughting rooms. The other four stories contain one hundred and twelve rooms for students.

### IV. THE FIRST BUILDING.

The First Building on College Hill, erected in 1846, is fifty feet in width by eighty feet in length, and three stories in height. The building will be used as a Laboratory of Biology.

### V. BUCKNELL COTTAGE FOR MEN.

The Bucknell Cottage for men is contiguous to the First Building and is connected with it by a covered passageway. It is of brick, three stories high, sixty feet in length and forty feet in width, and is finished in natural wood. The building contains a recitation room, teachers' apartments, and rooms for students. The rooms have high ceilings, large double windows with inside shutters, and two commodious closets each.

### VI. THE BUCKNELL HALL.

Bucknell Hall is the Chapel of the College, in which the students of the College meet for worship.

### VII. THE CARNEGIE LIBRARY BUILDING.

The library building was given by the Honorable Andrew Carnegie, D.C.L., in the year 1905.

The building is sixty-four feet by ninety, built of pressed brick, and trimmed with brownstone. The center,



thirty feet by ninety, is used as a reading room. At the height of sixteen feet there is a gallery extending around the room. The sides, each fifteen feet by ninety, are divided on the first floor into rooms for special collections and for offices. The second and third floors will be used for stack rooms. The building will accommodate about one hundred thousand volumes.

### VIII. THE OBSERVATORY.

The Observatory was erected in 1887 and enlarged in 1905. It is designed for the use of students in Practical Astronomy.

The equipment represents the latest improvements in astronomical instruments. It consists of a Clark Equatorial Telescope of ten inches aperture and twelve and one half feet focal length, furnished with a fine position Micrometer and all the usual accessories; a Spectroscope with prism and grating by Brashear; a three-inch prismatic Transit, with a thirteen wire movable Micrometer; a Fauth Chronograph with Bond Spring Governor; a Waldo Precision Clock for sidereal time, with mercurial compensation, break circuiting apparatus; Daniell's battery and telegraph sounders; a Seth Thomas Clock for solar time; a Sextant; a three-inch Altitude Azimuth Refractor; a set of Meteorological instruments; Celestial globes and maps, and standard works on Theoretical and Practical Astronomy.

### IX. THE CHEMICAL LABORATORY.

The Laboratory is forty-three feet in width and eighty-six feet in length, with two stories above the basement. In the first story, which has a clear height of fifteen feet, are a lecture room, seating one hundred and twenty-five students, and a large working room, in which are tables for individual work in Chemical Analysis; the

second floor contains a lecture room and rooms for laboratory work in Analysis; the basement has room for Applied Chemistry, and a fireproof room. The attic contains a room for dissection in Human Anatomy.

## X. THE PHYSICAL LABORATORY.

The Physical Laboratory was erected in 1902. It is a building of two stories, fifty by sixty, constructed of brick trimmed with brownstone. The basement serves for the heating and lighting plant of the Institution; the main story, with one room twenty by fifty and another forty by forty-five, is used for shop work.

## XI. THE FOUNDRY.

The Foundry, erected in 1915, is a building of brick, fitted up with all appliances requisite for the courses in molding and casting.

## XII. THE TUSTIN GYMNASIUM.

The basement of the Gymnasium is built of stone, and contains an office for the director, rooms for students, lockers, dressing rooms, and shower baths. The second story is built of brick, rising twenty-two feet from the main floor to the square, and is open to the room. At the height of twelve feet a running-track gallery, six feet wide, surrounds the room.

## XIII. THE ATHLETIC FIELD.

The field is conveniently located at the foot of "College Hill," and has been graded and fitted up for outdoor sports. In the northwest corner, at the main entrance to the College grounds, a shaded section has been set aside for tennis. The athletic field is sufficiently large for football, baseball, and lacrosse. A running track, a quarter-mile in

length, has been constructed on the eastern part of the campus. The Tustin Gymnasium is located at the end of the field, so as to be near to the center of exercise, and easily accessible to the trainers and students.

#### XIV. BUILDINGS OF THE WOMEN'S COLLEGE.

The buildings and campus of this department are set apart for the use of women taking courses in the College and in the School of Music.

1. **The Main Building** contains, on the first floor, an office for the Dean and the Registrar, a reception room, the office of the Director of Music, recitation rooms, and a dining hall; on the second floor a schoolroom and a parlor; on the third floor, a library room, teachers' apartments, and students' rooms. The main building was enlarged, 1905, by an addition to the dining hall.

2. **The South Hall**, erected in 1869, is devoted to students' rooms, except the third story, which is used as a Laboratory for the department of Domestic Science.

3. **The Bucknell Cottage** stands to the southwest of the Main Building, and is connected with it by an enclosed passageway. It is built of brick, in the Queen Anne style of architecture, and has dimensions of forty feet by one hundred feet. The interior is finished in natural wood, and is equipped, in matters of light, heat, and ventilation, with modern improvements.

The portion allotted to students' rooms affords accommodations for forty occupants. These rooms are in suites on the general plan of a center parlor, with bedroom and closets on either side. In this building is the **Studio**, a spacious room with such adjustments for the admission of light and supply of unencumbered wall surfaces as adapt it for the execution and display of art products.



**4. New Cottage** for women, with a front of one hundred and twenty-eight feet and a depth of forty feet, rising three stories above the basement, was erected in 1905. It contains eighty-seven rooms.

**The Calisthenium** occupies the upper story, and has a floor surface of over four thousand feet.

**5. The Annex.** An additional residence building has been secured which accommodates twenty College women.

**The Campus** of the Women's College is separated from the main College grounds by Loomis Street.

#### XV. HEATING AND LIGHTING PLANT.

A central steam heating and electric lighting plant has been erected; all the rooms, public and private, in the several buildings of the Institution, are warmed and lighted from this plant.

#### XVI. THE PRESIDENT'S HOUSE.

The Corporation owns a house for the use of the President of the University.

# THE COLLEGE

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## THE FACULTY.

---

JOHN HOWARD HARRIS, PH.D., LL.D., PRESIDENT,  
AND PROFESSOR OF PSYCHOLOGY AND ETHICS.

LLEWELLYN PHILLIPS, D.D.,  
DEAN OF THE COLLEGE.

MISS ANNA ROBERTA CAREY, A.M.,  
DEAN OF THE DEPARTMENT FOR WOMEN.

NELSON FITHIAN DAVIS, SC.D.,  
DEAN OF THE SUMMER SCHOOL.

PAUL GEORGE STOLTZ, A.M.,  
DIRECTOR OF THE SCHOOL OF MUSIC.

ENOCH PERRINE, A.M., LITT.D.,  
SECRETARY OF THE FACULTY.

WILLIAM EMMET MARTIN, A.M., L.H.D.,  
LIBRARIAN.

BENJAMIN F. THOMAS, A.M.,  
REGISTRAR OF THE UNIVERSITY.

FRANK EUGENE BURPEE, A.M.,  
SUPERINTENDENT OF BUILDINGS AND GROUNDS.

---

\* FREEMAN LOOMIS, A.M., PH.D.,  
PROFESSOR OF MODERN LANGUAGES AND LITERATURE.

WILLIAM CYRUS BARTOL, A.M., PH.D.,  
PROFESSOR OF MATHEMATICS AND ASTRONOMY.

FRANK ERNEST ROCKWOOD, A.M., LL.D., D.C.L.,  
PROFESSOR OF THE LATIN LANGUAGE AND LITERATURE.  
(EMERITUS.)

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\* Retired.

WILLIAM GUNDY OWENS, A.M.,  
PROFESSOR OF CHEMISTRY.

ENOCH PERRINE, A.M., LITT.D.,  
PROFESSOR OF THE ENGLISH LANGUAGE AND LITERATURE.

THOMAS FRANKLIN HAMBLIN, A.M., LL.D.,  
NEW JERSEY PROFESSOR OF THE GREEK LANGUAGE AND LITERATURE.

WILLIAM EMMET MARTIN, A.M., L.H.D.,  
PROFESSOR OF LOGIC AND SOCIOLOGY.

NELSON FITHIAN DAVIS, SC.D.,  
PROFESSOR OF BIOLOGY.

EPHRAIM M. HEIM, PH.D.,  
PROFESSOR OF ECONOMIC AND POLITICAL SCIENCE.

LLEWELLYN PHILLIPS, A.M., D.D.,  
JOHN P. CROZER PROFESSOR OF EDUCATION.

HENRY THOMAS COLESTOCK, A.M., PH.D.,  
PROFESSOR OF HISTORY.

CHARLES ARTHUR LINDEMANN, A.M.,  
PROFESSOR OF APPLIED MATHEMATICS.

FRANK MORTON SIMPSON, SC.M.,  
PROFESSOR OF PHYSICS AND MECHANICAL DRAWING.

WALTER KREMER RHODES, A.M., E.E.,  
PROFESSOR OF ELECTRO-TECHNICS.

FLOYD GEORGE BALLENTINE, A.M., PH.D.,  
PROFESSOR OF THE LATIN LANGUAGE AND LITERATURE.

FRANK EUGENE BURPEE, A.M.,  
PROFESSOR OF MECHANICAL ENGINEERING.

MARTIN LINNÆUS DRUM, A.M.,  
PROFESSOR OF SURVEYING.

NORMAN HAMILTON STEWART, A.B., SC.M.,  
PROFESSOR OF BIOLOGY.

BENJAMIN W. GRIFFITH, A.M.,  
PROFESSOR OF FRENCH.

GLENN VINTON BROWN, PH.D.,  
PROFESSOR OF CHEMICAL ENGINEERING.

CHARLES CARPENTER FRIES, A.M.,  
PROFESSOR OF RHETORIC.

PAUL GEORGE STOLTZ, A.M.,  
PROFESSOR OF MUSIC.

ANNA ROBERTA CAREY, A.M.,  
PROFESSOR OF HOUSEHOLD ECONOMICS.

BROMLEY SMITH, A.M.,  
ASSISTANT PROFESSOR IN ORATORY.

LEO LAWRENCE ROCKWELL, A.M.,  
ASSISTANT PROFESSOR IN SPANISH AND GERMAN.

HARRY SCHEIDY EVERETT, A.M., SC.M.,  
ASSISTANT PROFESSOR IN MATHEMATICS.

WILLIAM HILLIARD SCHUYLER, CHEM.E.,  
ASSISTANT PROFESSOR IN CHEMISTRY.

JOHN WILLIAM RICE, SC.M.,  
ASSISTANT PROFESSOR IN BIOLOGY.

\* GARDNER WADE EARLE, A.M.,  
INSTRUCTOR IN RHETORIC.

FRANK EDWARD STETLER, SC.B. IN E.E.,  
INSTRUCTOR IN DRAWING.

HAROLD MURRAY McCLURE, A.M.,  
ATTORNEY-AT-LAW,  
LECTURER ON CONTRACTS AND PARTNERSHIPS.

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\* In Military Service.



ALBERT WILLIAM JOHNSON, A.M.,  
PRESIDENT JUDGE, SEVENTEENTH JUDICIAL DISTRICT,  
LECTURER ON REAL AND PERSONAL PROPERTY.

CLOYD NILLIS STEININGER, A.M.,  
ATTORNEY-AT-LAW,  
LECTURER ON BILLS AND NOTES AND ON AGENCY.

THOMAS WOOD, A.M., LL.B.,  
LECTURER ON REAL PROPERTY.

## ADMISSION OF STUDENTS

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### TO FRESHMAN STANDING.

1. There must be furnished to the President by the candidate satisfactory testimonials of good moral character, and, if from another college, a certificate of honorable dismissal must be presented. But no student from another college will be admitted except at the beginning of the Academic year.

The required age for admission to the Freshman Class is fifteen years.

2. The requirements for admission to each of the various Courses amount to the work of a High School with a four years' Course. Expressed in units, of a term of twelve weeks, five lessons a week, the requirements for admission to any of the Courses are forty-eight such units, of which thirty-two are required in General for all of the Courses and the remainder vary with the several Courses.

Three of these units are equal to one Carnegie unit.

Candidates for admission to any of the Courses must pass examination in the following:

### I. GENERAL REQUIREMENTS.

#### 1. ENGLISH (nine units).

a. Writing from dictation.

b. English Grammar.

c. Elements of Rhetoric—Invention, Style, and Punctuation.

d. A brief composition upon a subject assigned at the time of the examination. No candidate will be accepted in English whose work is notably defective in spelling, punctuation, idiom, or division into paragraphs.

e. **Reading.**—The books set for reading are those designated by the College Association of the Middle States and Maryland. The candidate will be required to present evidence of a general knowledge of the subject-matter, and to answer simple questions on the lives of the authors. The form of examination

will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books. In preparation for this part of the requirement, it is important that the candidate shall have been instructed in the fundamental principles of Rhetoric.

*f. Study and Practice.*—This part of the examination presupposes the thorough study of each of the works named by the College Association. The examination will be upon subject-matter, form, and structure.

The candidate is advised to do reading parallel and subsidiary to these books; he is recommended to commit to memory as much English poetry as possible, and to pay close attention to the essentials of Grammar.

2. MATHEMATICS (six units).

*a.* Algebra, including Quadratic Equations. The requirements in this study include the treatment of Radicals.

*b.* Plane Geometry.

3. LATIN (six units).

*a.* Latin Grammar;

*b.* Latin Prose Composition;

*c.* Four Books of Cæsar's Commentaries.

4. HISTORY (six units).

*a.* History of Greece;

*b.* History of Rome;

*c.* History of the United States.

5. SCIENCE (four units).

*a.* Physiology;

*b.* Physics (three units); or Chemistry (three units).

6. FREE-HAND DRAWING (one unit).

## II. PARTICULAR REQUIREMENTS.

A. To enter the Classical Course, the candidate, in addition to the General Requirements, must pass examination in the following:

1. GREEK (nine units).
  - a. Greek Grammar;
  - b. Greek Prose Composition;
  - c. Greek Reader;
  - d. Four Books of Xenophon's *Anabasis*;
  - e. Three Books of Homer's *Iliad*.
2. LATIN (seven units).
  - a. Seven Orations of Cicero;
  - b. Six Books of the *Æneid*.

B. To enter the Latin division of the Philosophical Course, or the Course in Jurisprudence, the candidate, in addition to the General Requirements, must pass examinations in the following:

1. LATIN (seven units).
  - a. Seven Orations of Cicero;
  - b. Six Books of the *Æneid*.
2. SOLID GEOMETRY (one unit).
3. Any eight units selected from group E.

C. To enter the Greek division of the Philosophical Course, the candidate, in addition to the General Requirements, must pass examination in the following:

1. GREEK (nine units).
  - a. Greek Grammar;
  - b. Greek Prose Composition;
  - c. Greek Reader;
  - d. Four Books of Xenophon's *Anabasis*;
  - e. Three Books of Homer's *Iliad*.
2. SOLID GEOMETRY (one unit).
3. Any six units selected from group E.



D. To enter the General Science Course, the Course in Biology, the Course in Chemistry, or the Course in Civil, in Mechanical or in Electrical Engineering, the candidate, in addition to the General Requirements, must pass examination in the following:

1. GERMAN, FRENCH, SPANISH, OR ITALIAN.

The Grammar of the Language, Composition and Translation at sight of easy prose (three to nine units).

Less than three units, or one year of work, in any language will not be accepted as part of the Entrance Requirements.

2. SOLID GEOMETRY (one unit).

3. Enough units selected from group E to make forty-eight units in all.

E. History of English Literature, History of Modern Europe, History of England, American Civics, Botany, Zoölogy, Physiography, Geology, Astronomy, Chemistry with Laboratory Practice, Physics with Laboratory Practice, High School Agriculture, German, French, Spanish, Italian, Greek, Latin.

### ADMISSION ON CERTIFICATE.

Graduates of Pennsylvania State Normal Schools are admitted without examination.

Certificates of the College Entrance Examination Board are accepted for admission, and also certificates of the State Board for Examination of Candidates for registration as Students of Law, and Regents' certificates of New York State.

Students who have graduated in a four years' Course of study in Preparatory and High Schools of superior standing may be admitted upon the certificate of the Principal of the school from which they come without examination upon the subjects specified in the certificate.

All students received upon certificate are regarded as in conditional standing, and will not be matriculated unless their work during the first ten weeks of the term shows that their preparation has been sufficiently thorough.

### SPECIAL STUDENTS.

Students who do not desire to take a full regular Course can enter and select special shorter Courses with the sanction of the

Faculty; but in all cases, satisfactory examination must be passed upon the subjects required for admission to the Freshman Class of the Course from which they intend to select.

### TO ADVANCED STANDING.

**I. General Requirements.** A proportionate increase of age is required for admission to advanced classes over that required for admission to Freshman standing. Other general requirements are the same as for admission to the Freshman Class.

**II. Particular Requirements.** Candidates for admission to advanced classes are examined both as for admission to Freshman standing and also on the studies that have been pursued by the class which they desire to enter.

### MATRICULATION.

Matriculation gives membership in the College and is a condition precedent to all degrees and honors as well as to honorable dismissal. No student is admitted to matriculation until he has shown by his class work during at least ten weeks and by his deportment that he is worthy of membership in the College.

### HONORABLE DISMISSION.

No person will be dismissed from the College as in good standing who leaves it while under censure; and papers of dismission given to those leaving while under a condition shall distinctly mention the condition; nor will honorable dismission be granted to any student who has not discharged all his pecuniary obligations to the Institution. No papers of dismission or of grades will be granted to a student who has not completed one year of work; nor are credits certified except for work done in class in this College. All certificates of dismission are signed by the President of the University and sealed with the corporate seal, and no others are valid.

No certificate or statement as to work done in his department is granted by any professor or instructor to an undergraduate.

### COURSES OF STUDY.

The Bucknell College offers ten Courses of study leading to degrees in Arts, Philosophy, and Science. Each of the Courses extends through four years. For the Bachelor's degree, thirty-six courses, each of one term five hours a week, must be presented, as well as the prescribed work in oral and written Expression, the former of which

extends through two years of the Course and the latter through four years, and also twelve lecture courses.

Only major subjects taken in class are accepted for the Bachelor's degree.

**I. The Classical Course**, leading to the degree of Bachelor of Arts, aims to furnish a liberal education in classical and modern Literature, in the Sciences and Arts. Candidates for the degree of Bachelor of Arts must present at least three courses in German, French or Spanish.

**II. The Philosophical Course**, with Latin or Greek in each of its two divisions, aims to furnish a thorough training in advanced studies to those who desire to pursue but one of the Ancient Languages. Those who have completed the studies of the Course, including not less than four courses of German, French, Spanish, or Italian, are admitted to the degree of Bachelor of Philosophy. But a candidate in the Philosophical Course who offers nine College courses in either of the Ancient Classical languages or nine College courses in English, German, or French in addition to the required work in Latin or Greek may receive the degree of Bachelor of Arts.

**III. The Course in Jurisprudence**, leading to the degree of Bachelor of Arts, covers four years of work in Law, Political Science, Economics, Philosophy, History, Literature, and Mathematics. The Course in Jurisprudence is designated for persons preparing for the legal profession, for a business career, and for participation in public affairs. No one is graduated from this Course if his average standing for the Course is below nine.

**IV. The General Science Course**, leading to the degree of Bachelor of Science, is substantially the same as the Philosophical Course, with the substitution of additional Modern Language and Scientific Studies for Latin and Greek. Candidates for the degree of Bachelor of Science must present at least one year of German or French for admission and at least four courses of college work in German, French, or Spanish as requisites for graduation.

**V. The Course in General Science, Division of Household Economics**, leading to the degree of Bachelor of Science, covers four years of work in both theory and practice in the subjects fundamental to a competent knowledge of Domestic Science, together with other subjects important to a liberal education.

**VI. The Course in Biology**, leading to the first degree in Biological Science, covers four years of work in Biology, Chemistry, Physics, Mathematics, and Literature. No one is admitted to the first degree in Biological Science if his average standing in Biology is below nine.

**VII. The Course in Chemical Engineering**, leading to the first degree in Chemical Engineering, covers four years of work in Chemistry, Physics, Mathematics, Biology, and Literature. No one is admitted to the first degree in Chemical Engineering if his average standing in Chemistry is below nine.

The requirements in Modern Language are the same for the Course in Jurisprudence as for the Philosophical Course; and for the Course in Biology and for that in Chemistry they are the same as for the Course in General Science.

**VIII. The Course in Civil Engineering**, leading to the first degree in Civil Engineering, covers four years of work in Pure and Applied Mathematics, Chemistry, Technology, and Language. No one is admitted to the first degree in Civil Engineering if his average standing for the Course is below nine.

**IX. The Course in Electrical Engineering**, leading to the first degree in Electrical Engineering, covers four years of work in Pure and Applied Mathematics, Chemistry, Physics, Electro-technics, and Language. No one will be admitted to the first degree in Electrical Engineering if his average standing for the Course is below nine.

**X. The Course in Mechanical Engineering**, leading to the first degree in Mechanical Engineering, covers four years of work in Pure and Applied Mathematics, Chemistry, Physics, Electro-technics, Steam Engineering, Shop-work, and Language. No one will be admitted to the first degree in Mechanical Engineering if his average standing for the Course is below nine.

**XI. Advanced Courses in Arts, in Science, and in Engineering** have been established, leading to the degrees respectively of Master of Arts, Master of Science, Master of Pedagogy, Civil Engineer, and Electrical Engineer.

The Master's degree is conferred only on condition that the candidate has completed a Course of Liberal study, approved by the



Faculty, sufficient in amount to constitute a fifth year of college work, two thirds of which must be in one department. Particulars may be learned by addressing the President.

### HOUSEHOLD ECONOMICS.

The Course in Household Economics offers instruction in both theory and practice in the subjects fundamental to a competent knowledge of Household Economics.

Based on the principles of Chemistry, Physiology and Hygiene, Biology, Bacteriology, and Psychology, the knowledge of cookery, dietetics, home-sanitation, household economy, and home decoration, gained by the diligent student will meet the demands of successful practice in home, school, or institution. To enter upon this Course, the student must have the usual four-year High School Course.

The Course in General Cookery includes instruction in the care of the kitchen and all its appointments; the principles of cookery, as applied to baking, boiling, stewing, broiling, roasting, steaming; and practical demonstration of these principles in the cooking of meats, vegetables, eggs, pastries, cake, puddings, sauces, salads, and salad dressings, and desserts of various kinds.

The Course in Household Economics is intended to fit young women to teach Household Economics in High Schools and for the duties of the household. Further information can be obtained by addressing the Dean of the Department of Women.

## CURRICULA.

Roman numerals indicate the number of class-exercises required each week; when there is no designation, five is understood.

### I. THE CLASSICAL COURSE.

*Leading to the Degree of Bachelor of Arts.*

#### FRESHMAN YEAR.

- |  |                             |
|--|-----------------------------|
| I. TERM—Solid Geometry,<br>Cicero de Senectute and Livy,<br>Greek, | Rhetoric, I,<br>Oratory, I. |
| II. TERM—Higher Algebra,<br>Livy,<br>Greek,                        | Rhetoric, I,<br>Oratory, I. |
| III. TERM—Trigonometry,<br>Cicero de Officiis,<br>Greek,           | Rhetoric, I,<br>Oratory, I. |

#### SOPHOMORE YEAR.

- |  |  |
|--|--|
| I. TERM—English Literature,<br>Horace, | Astronomy, I, or<br>History of Art, I, |
|  | Oratory, I.                            |

#### ELECTIVE STUDIES:

- |  |  |
|--|--|
| German,<br>French,<br>Spanish,<br>Greek History, | American History, a,<br>Chemistry,<br>Surveying,<br>Analytical Geometry. |
| II. TERM—Rhetoric,<br>Greek,                     | Astronomy, I, or<br>History of Art, I,                                   |
|  | Oratory, I.  |

## ELECTIVE STUDIES:

<i>Roman History,</i>	<i>Logic,</i>
<i>American History, b,</i>	<i>Chemistry,</i>
<i>Latin, 6,</i>	<i>Differential Calculus,</i>
<i>German,</i>	<i>Advanced Algebra,</i>
<i>French,</i>	<i>Physiology.</i>
<i>Spanish,</i>	

III. TERM—Civics, or Economic History, History of Art, I, or  
or Constitutional Law, South America, I.

## ELECTIVE STUDIES:

<i>Public Address,</i>	<i>Anthropology,</i>
<i>Argumentation,</i>	<i>Child Psychology,</i>
<i>American Literature,</i>	<i>Botany,</i>
<i>Greek,</i>	<i>Chemistry,</i>
<i>Juvenal,</i>	<i>Integral Calculus,</i>
<i>German,</i>	<i>Elements of Law,</i>
<i>French,</i>	<i>Astronomy.</i>
<i>Spanish,</i>	

## JUNIOR YEAR.

I. TERM { Psychology, Sanitary Science, I.  
Thesis,

## ELECTIVE STUDIES:

<i>Greek,</i>	<i>History of Education, a,</i>
<i>Latin, 8,</i>	<i>Teachers' Mathematics,</i>
<i>English, 6 or 7,</i>	<i>Physiological Psychology,</i>
<i>German,</i>	<i>Biology,</i>
<i>French,</i>	<i>Embryology,</i>
<i>English Bible,</i>	<i>Entomology,</i>
<i>History, Oriental,</i>	<i>Chemistry,</i>
<i>Economics,</i>	<i>Mechanics,</i>
<i>Real Property,</i>	<i>Geology.</i>
<i>Sociology,</i>	

II. TERM { Ethics, Sanitary Science, I.  
Thesis,

## ELECTIVE STUDIES:

<i>Greek,</i>	<i>Advanced Logic,</i>
<i>Latin Poets,</i>	<i>Comparative Psychology,</i>
<i>English, 8,</i>	<i>Zoölogy of Invertebrates,</i>
<i>Journalism,</i>	<i>Animal Histology, a,</i>
<i>German,</i>	<i>Human Anatomy, a,</i>
<i>French,</i>	<i>Chemistry,</i>
<i>English Bible,</i>	<i>Higher Analytics,</i>
<i>History, English, a,</i>	<i>Mathematics, 9,</i>
<i>Municipal Sociology,</i>	<i>Physics,</i>
<i>Money and Banking,</i>	<i>Municipal Government.</i>
<i>Contracts,</i>	

III. TERM—History of Philosophy,  
Thesis,

Religious Education, I.

## ELECTIVE STUDIES:

<i>Greek,</i>	<i>Zoölogy of Vertebrates,</i>
<i>Latin, 10,</i>	<i>Cryptogamic Botany,</i>
<i>German,</i>	<i>Bacteriology,</i>
<i>French,</i>	<i>Histology, b,</i>
<i>English Bible,</i>	<i>Chemistry,</i>
<i>Partnership,</i>	<i>Physics,</i>
<i>Psychology of Education,</i>	<i>Constitutional Law.</i>

## SENIOR YEAR.

I. TERM { Social Ethics, I,  
Thesis.

## ELECTIVE STUDIES:

<i>Greek Testament,</i>	<i>Principles of Education,</i>
<i>Latin, 11,</i>	<i>International Law,</i>
<i>Anglo-Saxon,</i>	<i>Comparative Anatomy,</i>
<i>English, 4 or 9,</i>	<i>Chemistry,</i>
<i>German,</i>	<i>Geology,</i>
<i>French,</i>	<i>Geodetic Astronomy,</i>
<i>Medieval History,</i>	<i>Personal Property,</i>
<i>Advanced Ethics.</i>	

II. TERM { Political Ethics, I,  
Thesis.



## ELECTIVE STUDIES:

<i>Greek Testament,</i>	<i>Philosophy of Mind,</i>
<i>Latin, 12,</i>	<i>History, 11,</i>
<i>Roman Life,</i>	<i>History of Europe, a,</i>
<i>Chaucer,</i>	<i>Comparative Politics,</i>
<i>German,</i>	<i>Public Finance,</i>
<i>French,</i>	<i>Chemistry,</i>
<i>Theories of Education,</i>	<i>Economic Geology,</i>
<i>Agency,</i>	<i>Human Anatomy, b.</i>

III. TERM—Literature, I, or  
Forestry, I.

## ELECTIVE STUDIES:

<i>Plato, Phaedo,</i>	<i>History of Europe, b,</i>
<i>Latin, 13,</i>	<i>Private Corporations,</i>
<i>German,</i>	<i>Roman Law,</i>
<i>French,</i>	<i>Bills and Notes,</i>
<i>Shakspeare,</i>	<i>Chemistry,</i>
<i>History of Philosophy,</i>	<i>Forestry,</i>
<i>Secondary Education,</i>	<i>Railroad Transportation,</i>
<i>Advanced Composition.</i>	

Seniors may take any of the Electives of the Junior Year for corresponding terms.

## II. THE PHILOSOPHICAL COURSE.

*Leading to the Degree of Bachelor of Philosophy*

## A. LATIN DIVISION.

## FRESHMAN YEAR.

I. TERM—Higher Algebra, Rhetoric, I,  
Cicero de Senectute and Livy, Oratory, I.  
*English or German or French or Spanish,*

II. TERM—Trigonometry, Rhetoric, I,  
Livy, Oratory, I.  
*English or German or French or Spanish,*

- III. TERM—Cicero de Officiis, Rhetoric, I,  
 Analytical Geometry Oratory, I.  
 or Astronomy,  
*English or German or French or Spanish.*

### SOPHOMORE YEAR.

- I. TERM—English Literature, Astronomy, I, or  
 Horace, History of Art, I,  
 Oratory, I.

#### ELECTIVE STUDIES:

<i>German,</i>	<i>American History, a,</i>
<i>French,</i>	<i>Chemistry,</i>
<i>Spanish,</i>	<i>Surveying,</i>
<i>Greek History,</i>	<i>Analytics.</i>

- II. TERM—Rhetoric, Astronomy, I, or  
 Oratory, I, History of Art, I.

#### ELECTIVE STUDIES:

<i>Roman History,</i>	<i>Spanish,</i>
<i>American History, b,</i>	<i>Physiology,</i>
<i>Latin, 6,</i>	<i>Chemistry,</i>
<i>German,</i>	<i>Differential Calculus,</i>
<i>French,</i>	<i>Advanced Algebra,</i>
<i>Logic.</i>	

- III. TERM—Civics or Economic History, History of Art, I, or  
 or Constitutional Law, South America, I.

#### ELECTIVE STUDIES:

<i>Argumentation,</i>	<i>Spanish,</i>
<i>Public Address,</i>	<i>Anthropology,</i>
<i>American Literature,</i>	<i>Elementary Law,</i>
<i>Juvenal,</i>	<i>Botany,</i>
<i>German,</i>	<i>Chemistry,</i>
<i>French,</i>	<i>Integral Calculus,</i>
<i>Child Psychology.</i>	

## JUNIOR YEAR.

I. TERM	{ Psychology, Thesis,	Sanitary Science, I.
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## ELECTIVE STUDIES:

<i>Latin, 8,</i>	<i>Economics,</i>
<i>German,</i>	<i>Physiological Psychology,</i>
<i>French,</i>	<i>Biology,</i>
<i>English Bible,</i>	<i>Entomology,</i>
<i>English, 6 or 7,</i>	<i>Embryology,</i>
<i>History, Oriental,</i>	<i>Chemistry,</i>
<i>Real Property,</i>	<i>Mechanics,</i>
<i>Sociology,</i>	<i>History of Education,</i>
<i>Teacher's Mathematics.</i>	

II. TERM	{ Ethics, Thesis,	Sanitary Science, I.
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## ELECTIVE STUDIES:

<i>Latin, 9,</i>	<i>Contracts,</i>
<i>English, 8,</i>	<i>Advanced Logic,</i>
<i>Journalism,</i>	<i>Comparative Psychology,</i>
<i>German,</i>	<i>Zoölogy of Invertebrates,</i>
<i>French,</i>	<i>Animal Histology, a,</i>
<i>English Bible,</i>	<i>Human Anatomy, a,</i>
<i>History, English, a,</i>	<i>Chemistry,</i>
<i>Municipal Sociology,</i>	<i>Mathematics, 9,</i>
<i>Money and Banking,</i>	<i>Higher Analytics,</i>
<i>Municipal Government,</i>	<i>Physics.</i>

III. TERM—History of Philosophy,	Religious Education, I, Thesis.
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## ELECTIVE STUDIES:

<i>Latin, 10,</i>	<i>Zoölogy of Vertebrates,</i>
<i>German,</i>	<i>Bacteriology,</i>
<i>French,</i>	<i>Histology, b,</i>
<i>English Bible,</i>	<i>Chemistry,</i>
<i>Partnership,</i>	<i>Astronomy,</i>
<i>Cryptogamic Botany,</i>	<i>Physics,</i>
<i>Psychology of Education,</i>	<i>Constitutional Law.</i>

**SENIOR YEAR.**

I. TERM { Social Ethics, I,  
Thesis.

**ELECTIVE STUDIES:**

<i>Latin, 11,</i>	<i>Principles of Education,</i>
<i>German,</i>	<i>International Law,</i>
<i>French,</i>	<i>Personal Property,</i>
<i>Anglo-Saxon,</i>	<i>Comparative Anatomy,</i>
<i>English, 4 or 9,</i>	<i>Chemistry,</i>
<i>Medieval History,</i>	<i>Geology,</i>
<i>Advanced Ethics,</i>	<i>Geodetic Astronomy.</i>

II. TERM { Political Ethics, I,  
Thesis.

**ELECTIVE STUDIES:**

<i>Latin, 12,</i>	<i>Roman Private Life,</i>
<i>Chaucer,</i>	<i>Comparative Politics,</i>
<i>German,</i>	<i>Public Finance,</i>
<i>French,</i>	<i>Chemistry,</i>
<i>History of Europe, a,</i>	<i>Economic Geology,</i>
<i>Philosophy of Mind,</i>	<i>Human Anatomy, b,</i>
<i>Theories of Education,</i>	<i>Agency.</i>

III. TERM—Literature, I, or  
Forestry, I.

**ELECTIVE STUDIES:**

<i>Latin, 13,</i>	<i>Secondary Education,</i>
<i>German,</i>	<i>Roman Law,</i>
<i>French,</i>	<i>Private Corporations,</i>
<i>Shakspeare,</i>	<i>Chemistry,</i>
<i>History of Philosophy,</i>	<i>Forestry,</i>
<i>History of Europe, b,</i>	<i>Railroad Transportation,</i>
<i>Bills and Notes,</i>	<i>Advanced Composition.</i>

Seniors may take any of the Electives of the Junior Year for corresponding terms.

## THE PHILOSOPHICAL COURSE.

## B. GREEK DIVISION.

## FRESHMAN YEAR.

- I. TERM—Higher Algebra, Rhetoric, I,  
 Greek, Oratory, I.  
*English or German or French or*  
*Spanish,*
- II. TERM—Trigonometry, Rhetoric, I,  
 Greek, Oratory, I.  
*English or German or French or*  
*Spanish,*
- III. TERM—Analytical Geometry Rhetoric, I,  
 or Astronomy, Oratory, I.  
 Greek,  
*English or German or French or*  
*Spanish,*

## SOPHOMORE YEAR.

- I. TERM—English Literature, Astronomy, I, or  
 Greek History, History of Art, I,  
 Oratory, I.

## ELECTIVE STUDIES:

<i>American History, a,</i>	<i>French,</i>
<i>German,</i>	<i>Chemistry,</i>
<i>Spanish,</i>	<i>Surveying.</i>

- II. TERM—Rhetoric, Astronomy, I, or  
 Greek, History of Art, I.  
 Oratory, I.

## ELECTIVE STUDIES:

<i>German,</i>	<i>Logic,</i>
<i>French,</i>	<i>Physiology,</i>
<i>Spanish,</i>	<i>Chemistry,</i>
<i>Roman History,</i>	<i>Differential Calculus,</i>
<i>American History, b,</i>	<i>Advanced Algebra,</i>



III. TERM—Civics or Economic History, History of Art, I, or  
or Constitutional Law, South America, I.

ELECTIVE STUDIES:

<i>Argumentation,</i>	<i>Spanish,</i>
<i>Public Address,</i>	<i>Integral Calculus,</i>
<i>American Literature,</i>	<i>Elements of Law,</i>
<i>Greek,</i>	<i>Botany,</i>
<i>German,</i>	<i>Anthropology,</i>
<i>French,</i>	<i>Chemistry,</i>
<i>Child Psychology.</i>	

JUNIOR YEAR.

I. TERM { Psychology, Sanitary Science, I.  
Thesis,

ELECTIVE STUDIES:

<i>Greek,</i>	<i>History of Education,</i>
<i>German,</i>	<i>Economics,</i>
<i>French,</i>	<i>Physiological Psychology,</i>
<i>English Bible,</i>	<i>Biology,</i>
<i>English, 6 or 7,</i>	<i>Entomology,</i>
<i>History, Oriental,</i>	<i>Embryology,</i>
<i>Real Property,</i>	<i>Chemistry,</i>
<i>Sociology,</i>	<i>Mechanics,</i>
<i>Teachers' Mathematics.</i>	

II. TERM { Ethics, Sanitary Science, I.  
Thesis,

ELECTIVE STUDIES:

<i>Greek,</i>	<i>Municipal Sociology,</i>
<i>German,</i>	<i>Comparative Psychology,</i>
<i>French,</i>	<i>Zoölogy of Invertebrates,</i>
<i>English, 8,</i>	<i>Animal Histology, a,</i>
<i>Journalism,</i>	<i>Human Anatomy, a,</i>
<i>English Bible,</i>	<i>Chemistry,</i>
<i>History, English,</i>	<i>Mathematics, 9,</i>
<i>Money and Banking,</i>	<i>Physics,</i>
<i>Municipal Government,</i>	<i>Higher Analytics,</i>
<i>Advanced Logic,</i>	<i>Contracts.</i>

III. TERM—History of Philosophy,  
Thesis,

Religious Education, I.

ELECTIVE STUDIES:

<i>Greek,</i>	<i>Cryptogamic Botany,</i>
<i>German,</i>	<i>Bacteriology,</i>
<i>French,</i>	<i>Histology, 6,</i>
<i>English Bible,</i>	<i>Chemistry,</i>
<i>Partnership,</i>	<i>Astronomy,</i>
<i>Zoölogy of Vertebrates,</i>	<i>Physics,</i>
<i>Psychology of Education.</i>	

SENIOR YEAR.

I. TERM { Social Ethics, I,  
Thesis.

ELECTIVE STUDIES:

<i>Greek Testament,</i>	<i>Advanced Ethics,</i>
<i>Anglo-Saxon,</i>	<i>Principles of Education,</i>
<i>English, 4 or 9,</i>	<i>International Law,</i>
<i>German,</i>	<i>Personal Property,</i>
<i>French,</i>	<i>Comparative Anatomy,</i>
<i>Medieval History,</i>	<i>Chemistry,</i>
<i>Geology.</i>	

II. TERM { Political Ethics, I,  
Thesis.

ELECTIVE STUDIES:

<i>Greek Testament,</i>	<i>Theories of Education,</i>
<i>Chaucer,</i>	<i>Roman Life,</i>
<i>German,</i>	<i>Comparative Politics,</i>
<i>French,</i>	<i>Public Finance,</i>
<i>Philosophy of Mind,</i>	<i>Chemistry,</i>
<i>History of Europe, a,</i>	<i>Economic Geology,</i>
<i>Agency,</i>	<i>Human Anatomy, b.</i>

III. TERM—Literature, I, or  
Forestry, I.

## ELECTIVE STUDIES:

<i>Plato, Phaedo,</i>	<i>Secondary Education,</i>
<i>French,</i>	<i>History of Europe, b,</i>
<i>German,</i>	<i>Roman Law,</i>
<i>Shakspeare,</i>	<i>Private Corporations,</i>
<i>History of Philosophy,</i>	<i>Chemistry,</i>
<i>Railroad Transportation,</i>	<i>Forestry,</i>
<i>Bills and Notes,</i>	<i>Advanced Composition.</i>

Seniors may take any of the Electives of the Junior Year for corresponding terms.

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## III. THE COURSE IN JURISPRUDENCE.

*Leading to the Degree of Bachelor of Arts.*

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## FRESHMAN YEAR.

I. TERM—Higher Algebra, Rhetoric, II,  
 Cicero de Senectute and Livy, Oratory, I.  
*Greek,*  
*English or German or French or*  
*Spanish,*

II. TERM—Trigonometry, Rhetoric, II,  
 Livy, Oratory, I.  
*Greek,*  
*English or German or French or*  
*Spanish,*

III. TERM—Civics, Rhetoric, II,  
 Cicero de Officiis, Oratory, I.  
*Greek,*  
*English or German or French or*  
*Spanish,*

**SOPHOMORE YEAR.**

- |                             |                       |
|-----------------------------|-----------------------|
| I. TERM—English Literature, | Political Science, I, |
| Horace,                     | Oratory, I.           |

## ELECTIVE STUDIES:

- |                             |                   |
|-----------------------------|-------------------|
| <i>Greek History,</i>       | <i>German,</i>    |
| <i>American History, a,</i> | <i>Surveying,</i> |
| <i>French,</i>              | <i>Chemistry.</i> |
| <i>Spanish,</i>             |                   |

- |                    |                       |
|--------------------|-----------------------|
| II. TERM—Rhetoric, | Political Science, I, |
| Logic,             | Oratory, I.           |

## ELECTIVE STUDIES:

- |                       |                             |
|-----------------------|-----------------------------|
| <i>Demosthenes,</i>   | <i>American History, b,</i> |
| <i>Quintilian,</i>    | <i>German,</i>              |
| <i>Roman History,</i> | <i>French,</i>              |
| <i>Spanish.</i>       |                             |

- |                            |                       |
|----------------------------|-----------------------|
| III. TERM—Elements of Law, | Political Science, I. |
| Constitutional Law,        |                       |

## ELECTIVE STUDIES:

- |                          |                             |
|--------------------------|-----------------------------|
| <i>Juvenal,</i>          | <i>Economic History,</i>    |
| <i>German,</i>           | <i>American Literature,</i> |
| <i>French,</i>           | <i>Argumentation,</i>       |
| <i>Spanish,</i>          | <i>Public Address,</i>      |
| <i>Child Psychology.</i> |                             |

**JUNIOR YEAR.**

- |                     |                |
|---------------------|----------------|
| I. TERM—Psychology, | Blackstone, I, |
| Economics,          | Thesis.        |

## ELECTIVE STUDIES:

- |  |                            |
|--|----------------------------|
| <i>Real Property, Blackstone B.II,</i> | <i>English Bible,</i>      |
| <i>English History,</i>                | <i>Latin, 8,</i>           |
| <i>Sociology,</i>                      | <i>Greek Tragedy,</i>      |
| <i>History of Education,</i>           | <i>English Literature,</i> |
| <i>Modern Language.</i>                |                            |

- |                    |                |
|--------------------|----------------|
| II. TERM—Ethics,   | Blackstone, I, |
| Money and Banking, | Thesis.        |

## ELECTIVE STUDIES:

<i>Contracts,</i>	<i>English Bible,</i>
<i>Municipal Government,</i>	<i>Greek,</i>
<i>History,</i>	<i>Latin, 9,</i>
<i>Logic, Course 2,</i>	<i>English Literature,</i>
<i>Modern Language,</i>	<i>Journalism.</i>

III. TERM—History of Philosophy,	Blackstone, I,
Private Corporations,	Thesis.

## ELECTIVE STUDIES:

<i>Partnership,</i>	<i>Greek,</i>
<i>English Bible,</i>	<i>Latin, 10,</i>
<i>History,</i>	<i>Modern Language,</i>
<i>Psychology of Education.</i>	

## SENIOR YEAR.

I. TERM—International Law,	{ Social Ethics, I,
	{ Thesis.

## ELECTIVE STUDIES:

<i>Personal Property,</i>	<i>Latin, 11,</i>
<i>Medieval History,</i>	<i>Modern Language,</i>
<i>Anglo-Saxon,</i>	<i>Advanced Ethics,</i>
<i>English Literature,</i>	<i>Principles of Education.</i>

II. TERM—Comparative Politics,	{ Political Ethics, I,
	{ Thesis.

## ELECTIVE STUDIES:

<i>Agency,</i>	<i>Demosthenes de Corona,</i>
<i>Public Finance,</i>	<i>Latin, 12,</i>
<i>Modern Europe, a,</i>	<i>Chaucer,</i>
<i>Philosophy of Mind,</i>	<i>Modern Language,</i>
<i>Theories of Education.</i>	

III. TERM—Roman Law,	Literature, I.
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## ELECTIVE STUDIES:

<i>Bills and Notes,</i>	<i>Plato's Phaedo,</i>
<i>Railroad Transportation,</i>	<i>Latin, 13,</i>
<i>Modern Europe, b,</i>	<i>Modern Language,</i>
<i>History, 9,</i>	<i>Secondary Education,</i>
<i>Shakspeare,</i>	<i>Advanced Composition, a.</i>

Seniors may take any of the Electives of the Junior Year for corresponding terms.

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## IV. THE GENERAL SCIENCE COURSE.

*Leading to the Degree of Bachelor of Science.*

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## FRESHMAN YEAR.

I. TERM—Higher Algebra,	Rhetoric, II,
Latin,	Oratory, I.
<i>English or German or French or Spanish,</i>	

II. TERM—Trigonometry,	Rhetoric, II,
Latin,	Oratory, I.
<i>English or German or French or Spanish,</i>	

III. TERM—Analytical Geometry,	Rhetoric, II,
or Astronomy,	Oratory, I.
Latin,	
<i>English or German or French or Spanish,</i>	

## SOPHOMORE YEAR.

I. TERM—English Literature,	Astronomy, I, or
	History of Art, I ,
Oratory, I.	

## ELECTIVE STUDIES:

<i>Chemistry,</i>	<i>Spanish,</i>
<i>Horace,</i>	<i>Greek History,</i>
<i>German,</i>	<i>American History, a,</i>
<i>French,</i>	<i>Surveying.</i>

II. TERM—Rhetoric,

Astronomy, I, or  
History of Art, I,

Oratory, I.

## ELECTIVE STUDIES:

*German,**Logic,**French,**Physiology,**Spanish,**Chemistry,**Roman History,**Differential Calculus,**American History, b,**Advanced Algebra.*III. TERM—Civics or Economic History,  
or Constitutional Law,History of Art, I,  
South America, I.

## ELECTIVE STUDIES:

*Public Address,**Elements of Law,**American Literature,**Anthropology,**Argumentation,**Botany,**Juvenal,**Integral Calculus,**German,**Chemistry,**French,**Child Psychology.**Spanish,*

## JUNIOR YEAR.

I. TERM { Psychology,  
Thesis,

Sanitary Science, I.

## ELECTIVE STUDIES:

*English, 6 or 7,**Economics,**German,**Physiological Psychology,**French,**Biology,**English Bible,**Embryology,**History, Oriental,**Entomology,**Sociology,**Chemistry,**Real Property,**Mechanics,**History of Education, a,**Teachers' Mathematics.*II. TERM { Ethics,  
Thesis,

Sanitary Science, I.

## ELECTIVE STUDIES:

<i>English, 8,</i>	<i>History of Education, b,</i>
<i>Journalism,</i>	<i>Contracts,</i>
<i>German,</i>	<i>Comparative Psychology,</i>
<i>French,</i>	<i>Zoölogy of Invertebrates,</i>
<i>English Bible,</i>	<i>Animal Histology, a,</i>
<i>History, English,</i>	<i>Human Anatomy, a,</i>
<i>Money and Banking,</i>	<i>Chemistry,</i>
<i>Municipal Government,</i>	<i>Mathematics, 9,</i>
<i>Municipal Sociology,</i>	<i>Higher Analytics,</i>
<i>Physics.</i>	

III. TERM—History of Philosophy, Religious Education, I,  
Thesis.

## ELECTIVE STUDIES:

<i>Greek, 8,</i>	<i>Zoölogy of Vertebrates,</i>
<i>German,</i>	<i>Bacteriology,</i>
<i>French,</i>	<i>Histology, b,</i>
<i>English Bible,</i>	<i>Astronomy,</i>
<i>Partnership,</i>	<i>Physics,</i>
<i>Cryptogamic Botany,</i>	<i>Chemistry,</i>
<i>Psychology of Education.</i>	

## SENIOR YEAR.

I. TERM { Social Ethics, I,  
Thesis.

## ELECTIVE STUDIES:

<i>Anglo-Saxon,</i>	<i>Principles of Education,</i>
<i>English, 4 or 9,</i>	<i>Advanced Ethics,</i>
<i>German,</i>	<i>International Law,</i>
<i>French,</i>	<i>Comparative Anatomy,</i>
<i>Medieval History,</i>	<i>Chemistry,</i>
<i>Personal Property,</i>	<i>Geology,</i>
<i>Geodetic Astronomy.</i>	

II. TERM { Political Ethics, I,  
Thesis.

## ELECTIVE STUDIES:

<i>German,</i>	<i>Theories of Education,</i>
<i>French,</i>	<i>Roman Life,</i>
<i>Chaucer,</i>	<i>Comparative Politics,</i>
<i>Philosophy of Mind,</i>	<i>Public Finance,</i>
<i>Modern Europe, a,</i>	<i>Chemistry,</i>
<i>History, 11,</i>	<i>Economic Geology,</i>
<i>Agency.</i>	

III. TERM—Literature, I, or  
Forestry, I.

## ELECTIVE STUDIES:

<i>German,</i>	<i>Secondary Education,</i>
<i>French,</i>	<i>Bills and Notes,</i>
<i>Shakspeare,</i>	<i>Roman Law,</i>
<i>History of Philosophy,</i>	<i>Private Corporations,</i>
<i>Modern Europe, b,</i>	<i>Chemistry,</i>
<i>Railroad Transportation,</i>	<i>Forestry,</i>
<i>Advanced Composition, a.</i>	

Seniors may take any of the Electives of the Junior Year for corresponding terms.

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## V. GENERAL SCIENCE COURSE.

*Leading to the Degree of Bachelor of Science.*

## B. DIVISION OF HOUSEHOLD ECONOMICS.

## FRESHMAN YEAR.

I. TERM—Chemistry,	Cookery, IV,
General Psychology,	Rhetoric, I,
French,	Physical Training, II.
II. TERM—Chemistry,	Cookery, IV,
Personal Hygiene,	Rhetoric, I,
{ Home Nursing,	Physical Training, II.
{ Emergencies,	
French,	

- |                      |                        |
|----------------------|------------------------|
| III. TERM—Chemistry, | Rhetoric, I,           |
| Cookery, IV,         | Physical Training, II. |
| French,              |                        |

**SOPHOMORE YEAR.**

- |                                |              |
|--------------------------------|--------------|
| I. TERM—Chemistry of Foods,    | Cookery, IV, |
| Biology,                       | Sewing, II.  |
| Literature,                    |              |
| II. TERM—Dietetics and Invalid | Cookery, IV, |
| Cookery,                       | Sewing, II.  |
| Physiology,                    |              |
| Rhetoric,                      |              |
| III. TERM—Child Psychology,    | Cookery, IV, |
| Botany,                        | Sewing, II.  |
| Home Economics,                |              |

**JUNIOR YEAR.**

- |                       |                           |
|-----------------------|---------------------------|
| I. TERM—Bacteriology, | Sanitary Science, I,      |
| Physics, 6,           | Experimental Cookery, II, |
|                       | Sewing, II.               |

**ELECTIVE STUDIES:**

- |                           |                                  |
|---------------------------|----------------------------------|
| <i>English, 6 or 7,</i>   | <i>Sociology,</i>                |
| <i>German,</i>            | <i>Psychology,</i>               |
| <i>French,</i>            | <i>Physiological Psychology,</i> |
| <i>Spanish,</i>           | <i>Embryology,</i>               |
| <i>Italian,</i>           | <i>Entomology,</i>               |
| <i>English Bible,</i>     | <i>Chemistry, Organic,</i>       |
| <i>History, Oriental,</i> | <i>History of Education, a.</i>  |

- |                                  |                           |
|----------------------------------|---------------------------|
| II. TERM—Comparative Psychology, | Sanitary Science, I,      |
|                                  | Experimental Cookery, II, |
|                                  | Sewing, II.               |

**ELECTIVE STUDIES:**

- |                    |                                  |
|--------------------|----------------------------------|
| <i>English, 8,</i> | <i>English Bible,</i>            |
| <i>German,</i>     | <i>History, English,</i>         |
| <i>French,</i>     | <i>History of Education, b,</i>  |
| <i>Spanish,</i>    | <i>Zoölogy of Invertebrates,</i> |
| <i>Italian,</i>    | <i>Animal Histology, a,</i>      |
|                    | <i>Chemistry, Organic.</i>       |



### III. TERM—Commerce and Banking, Institutional Cookery IV.

#### ELECTIVE STUDIES:

<i>German,</i>	<i>History of Philosophy,</i>
<i>French,</i>	<i>Psychology of Education,</i>
<i>Spanish,</i>	<i>Zoölogy of Vertebrates,</i>
<i>Italian,</i>	<i>Cryptogamic Botany,</i>
<i>English Bible,</i>	<i>Histology, b,</i>
<i>Chemistry, Organic.</i>	

### SENIOR YEAR.

I. TERM—Nutrition,	Social Ethics, I,
	Practice Teaching, II,
	Thesis.

#### ELECTIVE STUDIES:

<i>English, 4 or 9,</i>	<i>Medieval History,</i>
<i>German,</i>	<i>Principles of Education,</i>
<i>French,</i>	<i>Comparative Anatomy,</i>
<i>Geology.</i>	

II. TERM—Household Art and	Political Ethics, I,
Designing,	Practice Teaching, I,
	Invalid Cookery, II,
	Thesis.

#### ELECTIVE STUDIES:

<i>German,</i>	<i>History, 11,</i>
<i>French,</i>	<i>Theories of Education,</i>
<i>Chaucer,</i>	<i>Roman Life,</i>
<i>Philosophy of Mind,</i>	<i>Comparative Politics,</i>
<i>History of Europe, a,</i>	<i>Public Finance.</i>

III. TERM—Secondary Education,	Demonstration Cookery,
	II,
	Practice Teaching, I.

#### ELECTIVE STUDIES:

<i>German,</i>	<i>History of Philosophy,</i>
<i>French,</i>	<i>History of Europe, b,</i>
<i>Shakspeare,</i>	<i>Advanced Composition.</i>

Seniors may take any of the Electives of the Junior Year for corresponding terms.

Students who have completed the Freshman and Sophomore Years of the Domestic Science Course may receive certificates covering the work done.

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## VI. THE COURSE IN BIOLOGY.

*Leading to the First Degree in Biological Science.*

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### FRESHMAN YEAR.

- |                                |               |
|--------------------------------|---------------|
| I. TERM—Algebra,               | Rhetoric, II, |
| General Chemistry,             | Oratory, I.   |
| German,                        |               |
| or French,                     |               |
| II. TERM—Trigonometry,         | Rhetoric, II, |
| General Chemistry,             | Oratory, I.   |
| German,                        |               |
| or French,                     |               |
| III. TERM—Analytical Geometry, | Rhetoric, II, |
| Qualitative Chemistry,         | Oratory, I.   |
| German or French,              |               |

### SOPHOMORE YEAR.

- |                                |                        |
|--------------------------------|------------------------|
| I. TERM—Rhetoric,              | Drawing, I,            |
| Biology,                       | Scientific German, II, |
| Quantitative Chemistry,        | or French, II.         |
| II. TERM—Invertebrate Zoölogy, | Drawing, I,            |
| Physiology,                    | Scientific German, II, |
|                                | or French, II.         |

### ELECTIVE STUDIES:

- |                               |                               |
|-------------------------------|-------------------------------|
| <i>History,</i>               | <i>Chemistry,</i>             |
| <i>Modern Language,</i>       | <i>Differential Calculus.</i> |
| III. TERM—Vertebrate Zoölogy, | Drawing, I,                   |
| Botany,                       | Scientific German, II,        |
|                               | or French, II.                |

## ELECTIVE STUDIES:

<i>Chemistry,</i>	<i>Civics,</i>
<i>Anthropology,</i>	<i>American Literature,</i>
<i>Integral Calculus,</i>	<i>Modern Language,</i>
<i>Economic History,</i>	<i>Child Psychology.</i>

## JUNIOR YEAR.

I. TERM—Psychology,	Sanitary Science, I,
Mechanics,	Thesis.

## ELECTIVE STUDIES:

<i>Entomology,</i>	<i>Physiological Psychology,</i>
<i>Organic Chemistry.</i>	

II. TERM—Comparative Psychology,	Sanitary Science, I,
Physics,	Thesis.

## ELECTIVE STUDIES:

<i>History,</i>	<i>Literature,</i>
<i>Ethics,</i>	<i>Modern Language,</i>
<i>Organic Chemistry,</i>	<i>Human Anatomy, a.</i>

III. TERM—Neurology,	History of Art, I,
	or South America, I,
Physics,	Thesis.

## ELECTIVE STUDIES:

<i>Astronomy,</i>	<i>English Literature,</i>
<i>Theism,</i>	<i>Modern Language,</i>
<i>Cryptogamic Botany.</i>	

## SENIOR YEAR.

I. TERM—Comparative Anatomy,	{ Social Ethics, I,
Embryology,	
	Thesis.

## ELECTIVE STUDIES:

<i>Geology,</i>	<i>Modern Language,</i>
<i>Economics,</i>	<i>Organic Chemistry,</i>
<i>History,</i>	<i>English Bible,</i>
<i>History of Education,</i>	<i>Plant Ecology.</i>

## II. TERM—Histology,

{ Political Ethics, I,  
Thesis.

## ELECTIVE STUDIES:

*Human Anatomy, b,  
Economic Geology,  
Money and Banking,  
Chemistry,*

*History,  
English Bible,  
Modern Language.*

### III. TERM—Bacteriology.

Forestry, I.

**ELECTIVE STUDIES:**

*Chemistry,  
Railroad Transportation,  
Forestry,  
History,*

*Literature,  
English Bible,  
Modern Language,  
Advanced Composition, b,*

*Secondary Education.*

Seniors may take any of the Electives of the Junior Year for corresponding terms.

## VII. THE COURSE IN CHEMICAL ENGINEERING.

*Leading to the First Degree in Chemical Engineering.*

## FRESHMAN YEAR.

I. TERM—Chemistry.

Higher Algebra,  
*German or French.*

Rhetoric, II,  
Drawing, IV.

## II. TERM—Chemistry.

Trigonometry,  
*German or French.*

Rhetoric, II,  
Drawing, IV.

### III. TERM—Chemistry.

Analytical Geometry,  
*German or French.*

Rhetoric, II,  
Shopwork, IV.

**SOPHOMORE YEAR.**

- |  |   |
|--|---|
| I. TERM—Quantitative Chemistry,<br>Mechanics,<br>Rhetoric,             | Astronomy, I, or<br>History of Art, I,<br>Shopwork, IV.     |
| II. TERM—Quantitative Chemistry,<br>Physics,<br>Differential Calculus, | Astronomy, I, or<br>History of Art, I,<br>Shopwork, IV.     |
| III. TERM—Quantitative Chemistry,<br>Physics,<br>Integral Calculus,    | History of Art, I, or<br>South America, I,<br>Shopwork, II. |

**JUNIOR YEAR.**

- |  |   |
|--|---|
| I. TERM—Organic Chemistry,<br>Electrical Measurements,<br>Agricultural Chemistry,  | German Chemistry, I, or<br>French Chemistry, I,<br>Chemical Thesis. |
| II. TERM—Organic Chemistry,<br>Thermo-Dynamics,<br>Metallurgy and Glass-blowing,   | German Chemistry, I, or<br>French Chemistry, I,<br>Chemical Thesis. |
| III. TERM—Organic Chemistry,<br>Spectrum Analysis,<br><i>Agricultural Chemistry</i> , 2 or<br><i>Boilers and Engines</i> , | German Chemistry, I, or<br>French Chemistry, I,<br>Chemical Thesis. |

**SENIOR YEAR.**

- |  |                                     |
|--|-------------------------------------|
| I. TERM—Physical Chemistry,<br>{ Chemical Preparations,<br>{ Industrial Chemistry,<br><i>Geology</i> , or<br><i>Surveying</i> ,  | { Social Ethics, I,<br>{ Thesis.    |
| II. TERM—Physical Chemistry,<br>{ Chemical Preparations,<br>{ Industrial Chemistry,<br><i>Direct Current Machinery</i> , or<br><i>Hydraulic Motors</i> , or<br><i>Economic Geology</i> , | { Political Ethics, I,<br>{ Thesis. |



- III. TERM—Physical Chemistry, Contracts, I.  
                   { Chemical Preparations,  
                   { Industrial Chemistry,  
                   *Alternating Current Machinery,*  
                   *or Water Supply, or Ad-*  
                   *vanced Composition, b,*

Seniors may take any of the Electives of the Junior Year for corresponding terms.

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## VIII. THE COURSE IN CIVIL ENGINEERING.

*Leading to the First Degree in Civil Engineering.*

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### FRESHMAN YEAR.

- I. TERM—Higher Algebra, Rhetoric, II,  
                   Drawing, Oratory, I.  
                   *English or German or French,*  
                   *or Spanish,*
- II. TERM—Trigonometry, Rhetoric, II,  
                   Drawing, Oratory, I.  
                   *English or German or French,*  
                   *or Spanish,*
- III. TERM—Analytical Geometry, Rhetoric, II,  
                   Drawing, Shopwork, IV.  
                   *English or German or French,*  
                   *or Spanish,*

### SOPHOMORE YEAR.

- I. TERM—Rhetoric, Geodesy, I,  
                   Surveying, Shopwork, IV.  
                   Chemistry,
- II. TERM—Differential Calculus, Geodesy, I,  
                   Descriptive Geometry, Shopwork, IV.  
                   Chemistry,

- |   |                              |
|---|------------------------------|
| III. TERM—Integral Calculus,<br>Railroad Surveying,<br>Chemistry, | Geodesy, I,<br>Shopwork, II. |
|---|------------------------------|

### JUNIOR YEAR.

- |  |                                     |
|--|-------------------------------------|
| I. TERM—Mechanics,<br>Strength of Materials,<br>Roads and Pavements,                     | Architectural Design, I,<br>Thesis. |
| II. TERM—Physics,<br>Masonry,<br>Metallurgy,   | Architectural Design, I,<br>Thesis. |
| III. TERM—Physics,<br>Boilers and Engines,<br>{ Water Supply,<br>{ Sanitary Engineering, | Forestry, I,<br>Thesis.             |

### SENIOR YEAR.

- |   |                                       |
|---|---------------------------------------|
| I. TERM—Bridges and Buildings,<br>Geodetic Astronomy,<br><i>Electrical Measurements</i> , or<br><i>Geology</i> or<br><i>Theoretical Mechanics</i> ,   | { Social Ethics, I,<br>{ Thesis.      |
| II. TERM—Hydraulic Motors,<br>Bridges and Buildings,<br><i>Direct Current Machinery</i> , or<br><i>Economic Geology</i> or<br><i>Advanced Physics</i> ,   | { Political Ethics, I,<br>{ Thesis.   |
| III. TERM—Bridges and Buildings,<br>{ Mine Surveying,<br>{ City Surveying,<br><i>Alternating Current Machinery</i><br>or <i>Railroad Transportation</i> or<br><i>Advanced Physics</i> or<br><i>Forestry</i> , or <i>Advanced Com-</i><br><i>position</i> , b, | Contracts and Specifica-<br>tions, I. |

## IX. THE COURSE IN ELECTRICAL ENGINEERING.

*Leading to the First Degree in Electrical Engineering.***FRESHMAN YEAR.**

- |   |                                |
|---|--------------------------------|
| I. TERM—Higher Algebra,<br>Drawing,<br><i>English or German or French</i><br>or <i>Spanish</i> ,        | Rhetoric, II,<br>Oratory, I.   |
| II. TERM—Trigonometry,<br>Drawing,<br><i>English or German or French</i><br>or <i>Spanish</i> ,         | Rhetoric, II,<br>Oratory, I.   |
| III. TERM—Analytical Geometry,<br>Drawing,<br><i>English or German or French</i><br>or <i>Spanish</i> , | Rhetoric, II,<br>Shopwork, IV. |

**SOPHOMORE YEAR.**

- |   |   |
|---|---|
| I. TERM—Rhetoric,<br>Mechanics,<br>Chemistry,             | Astronomy, I, or<br>History of Art, I,<br>Shopwork, IV. |
| II. TERM—Differential Calculus,<br>Physics,<br>Chemistry, | Astronomy, I, or<br>History of Art, I,<br>Shopwork, IV. |
| III. TERM—Integral Calculus,<br>Physics,<br>Chemistry,    | Astronomy, I, or<br>South America, I,<br>Shopwork II.   |

**JUNIOR YEAR.**

- |   |  |
|---|--|
| I. TERM—Electrical Measurements,<br>Strength of Materials,<br><i>Descriptive Geometry</i> , or<br><i>Theoretical Mechanics</i> , or<br><i>Surveying</i> , | Machine Design<br>and Tools, I,<br>Thesis. |
| II. TERM—Direct Current Machinery,<br>Advanced Physics,<br>Metallurgy,  | Machine Design<br>and Tools, I,<br>Thesis. |

- III. TERM—Alternating Current Machinery, Machine Design  
 Advanced Physics, and Tools, I,  
 Boilers and Engines, Thesis.

### SENIOR YEAR.

- I. TERM—Design of Electrical Machinery, { Social Ethics, I,  
 Thesis.  
 Electrical Generating Stations and Transmission,  
 Graphical Analysis of Structures,
- II. TERM—Design of Electrical Machinery, { Political Ethics, I,  
 Thesis.  
 Telegraphs, Telephones, and Signaling Apparatus,  
 Hydraulic Motors,
- III. TERM—Electric Lighting, Contracts and Specifications, I.  
 Electric Railways,  
*Water Supply and Sanitary Engineering, or Advanced Composition, b,*

## X. THE COURSE IN MECHANICAL ENGINEERING.

*Leading to the First Degree in Mechanical Engineering.*

### FRESHMAN YEAR.

- I. TERM—Advanced Algebra, Rhetoric, I,  
 Drawing, Shopwork, II.  
*English or German or French or Spanish,*
- II. TERM—Trigonometry, Rhetoric, I,  
 Drawing, Shopwork, II.  
*English or German or French or Spanish,*

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|--|-------------------------------|
| III. TERM—Analytical Geometry,<br>Drawing,<br><i>English or German or French</i><br><i>or Spanish,</i> | Rhetoric, I,<br>Shopwork, IV. |
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**SOPHOMORE YEAR.**

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|---|---|
| I. TERM—Rhetoric,<br>Mechanics,<br>Chemistry,             | Astronomy, I, or<br>History of Art, I,<br>Shopwork, IV.     |
| II. TERM—Differential Calculus,<br>Physics,<br>Chemistry, | Astronomy, I, or<br>History of Art, I,<br>Shopwork, IV.     |
| III. TERM—Integral Calculus,<br>Physics,<br>Chemistry,    | History of Art, I, or<br>South America, I,<br>Shopwork, IV. |

**JUNIOR YEAR.**

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|--|-------------------------------------|
| I. TERM—Electrical Measurements,<br>Strength of Materials,<br><i>Descriptive Geometry, or</i><br><i>Surveying,</i> | Shopwork, IV,<br>Machine Design, I. |
| II. TERM—Direct Current Machinery,<br>Thermo-Dynamics,<br>Metallurgy,  | Shopwork, IV,<br>Machine Design, I. |
| III. TERM—Alternating Current<br>Machinery,<br>Thermo-Dynamics,<br>Boilers and Engines,                            | Shopwork, IV,<br>Machine Design, I. |

**SENIOR YEAR.**

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|---|--|
| I. TERM—Steam Engineering (49),<br>Design of Electrical Ma-<br>chinery,<br>Bridges and Buildings, | { Social Ethics, I,<br>Thesis,<br>Automobiles, IV. |
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II. TERM—Steam Engineering (50),	Political Ethics, I,
Design of Electrical Machinery,	Thesis,
Hydraulic Motors,	Heating and Ventilation, IV.

III. TERM—Steam Engineering (50),	Contracts, I,
Electric Lighting,	Refrigeration, IV.
<i>Water Supply and Sanitary Engineering, or Advanced Composition, b,</i>	

## DEPARTMENTS OF INSTRUCTION

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The method of instruction in the College is varied according to the nature of the subject. Each professor has his individual mode of imparting knowledge, and this, in the result, is advantageous to the learner. In general, the aim is to discuss each branch as the subject-matter requires, yet all are presented analytically, comparatively and historically, with the view of leading the student to the apprehension of the subject as an organic whole and in its relations. The range of the instruction can be gathered from the following account of the different departments.

### I. DEPARTMENT OF PHILOSOPHY.

JOHN HOWARD HARRIS, LL.D., PROFESSOR.

The studies in this department embrace Psychology, Philosophy, Ethics, and Theism.

1. **Psychology, Descriptive and Explanatory.** Required Course. Juniors. First term, five hours.

2. **Physiological and Experimental Psychology.** Elective to Seniors and Juniors. First term, five hours.—PROFESSOR DAVIS.

3. **Philosophy of Mind.** Elective to Seniors and Juniors. Second term, five hours.

4. **History of Philosophy.** Text-book and Lectures. Required of Juniors. Third term, five hours.

5. **Philosophy of Religion.** Third term, five hours.

6. **Greek Philosophy** (Greek 10). Elective to Seniors and Juniors.—PROFESSOR HAMBLIN.

7. **Roman Philosophy** (Latin 8). Elective to Seniors and Juniors.—PROFESSOR BALLENTINE.

8. **Ethics.** Required of Juniors. Second term, five hours.

9. **Social Ethics—Domestic Relations.** Lectures. Required of Seniors. First term, one hour.

10. **Political Ethics—Duties of Citizenship.** Lectures. Required of Seniors. Second term, one hour.

11. **Ethics of Plato and Aristotle.** Study of the Republic and Nicomachean Ethics, with collateral readings and thesis. First term, five hours.

## II. DEPARTMENT OF EDUCATION.

LLEWELLYN PHILLIPS, D.D.,

PROFESSOR OF EDUCATION.

1. **History of Education.** Seniors and Juniors. First term, five hours.

2. **Principles of Education.** Seniors and Juniors. First term, five hours.

3. **Educational Theories.** Seniors and Juniors. Second term, five hours.

4. **Psychology of Education.** Seniors and Juniors. Third term, five hours.

5. **Comparative Psychology.** Seniors and Juniors. Second term, five hours.—PROFESSOR DAVIS.

6. **Child Psychology.** With special reference to teaching. Sophomores. Third term, five hours.—MISS CAREY.

7. **Secondary Education. Administration and Methods.** Seniors and Juniors. Second and Third terms, five hours.

8. **Religious Education.** Lectures. Second term, one hour, Juniors. Third term, one hour. Seniors and Juniors.

9. **Teachers' Course in Latin.** Special topics in grammar, with practical exercises in Cæsar, Cicero, Vergil. Third term, five hours. Seniors and Juniors.—PROFESSOR BALLENTINE.

10. **Teachers' Course in English.** Designed to familiarize the student with the authors required for entrance to college with a view to teaching them.—PROFESSOR PERRINE.

11. **Teachers' Course in Mathematics.** Mathematics as developed in history and as used in education. (a) Arithmetic: Its culture value, utility, present status in the schools; reforms in arithmetical teaching. (b) Algebra: Its growth during the last three

centuries, typical parts (ethical value). (c) Geometry: Its basis, historical position, methods, recent geometry. Seniors and Juniors. First term.—PROFESSOR BARTOL.

#### CERTIFICATES.

The course in education and methods of teaching, including Child Psychology, the History, the Psychology, and the Principles of Education, are helpful to those intending to teach. Students who take not less than eight of these courses will be entitled to a certificate for the work done in addition to the diploma of the Course in which they graduate.

#### TEACHERS' CERTIFICATES.

Teachers' Provisional Certificates of Pennsylvania are issued to graduates of Bucknell University good for three years; Permanent Certificates are issued upon three years' successful experience in teaching in the schools of the state. Teachers' Certificates are also issued to graduates of Bucknell University by the Department of Education, State of New York, State of New Jersey, and all other states which issue certificates to the graduates of any college.

#### REGISTER OF TEACHERS.

In order to aid Boards of Control in securing suitable teachers, there is kept a registry of graduates of Bucknell University who may wish to engage in teaching. Alumni and friends of the College will render a service if they will inform the President of vacancies.

### III. DEPARTMENT OF LAW.

HAROLD MURRAY McCLOURE, A.M.

ATTORNEY-AT-LAW,

LECTURER ON CONTRACTS AND PARTNERSHIPS.

ALBERT WILLIAM JOHNSON, A.M.,

PRESIDENT JUDGE OF THE SEVENTEENTH JUDICIAL DISTRICT,

LECTURER ON PERSONAL PROPERTY.

CLOYD NILLIS STEININGER, A.M.,

ATTORNEY-AT-LAW,

LECTURER ON BILLS AND AGENCY.

THOMAS WOOD, A.M., LL.B.,

ATTORNEY-AT-LAW,

LECTURER ON REAL PROPERTY.

The Bucknell College of Liberal Arts offers in its courses for the degrees in Arts and Science a number of subjects specially bearing

upon the study of law. Students prepared for college and having taken one year's work in liberal studies will be admitted to the studies in Law. The instruction is by text-book, lecture, and study of cases. A certificate for the work done is given by the department, in addition to the Diploma of the College. But this certificate is not given for any legal subject in which the student's standing is below nine; nor to any student whose general average is below nine. Opportunity is given for the *Review* of the *Latin*, *History*, and *Literature* required in the Preliminary Examination for registration as students of Law in Pennsylvania.

Graduates of Bucknell are admitted to registration as students at Law in Pennsylvania without examination.

1. **Elementary Law.** Robinson's Elementary Law. Third term. Sophomore year.—PROFESSOR COLESTOCK.

2. **Blackstone's Commentaries.** B. I, III, IV. One hour, Junior year, three terms.—PROFESSOR COLESTOCK.

3. **Real Property.** Blackstone, B. II, and Select Cases, Lectures. First term, Junior year.—MR. WOOD.

4. **Personal Property.** Text-book, Select Cases, Lectures. First term, Senior year.—JUDGE JOHNSON.

5. **Contracts.** Text-books, Select Cases, Lectures. Second term, Junior year.—JUDGE MCCLURE.

6. **Bills and Notes.** Text-book, Select Cases, Lectures. Third term, Senior year.—MR. STEININGER.

7. **Agency.** Text-book, Select Cases, Lectures. Second term, Senior year.—MR. STEININGER.

8. **Partnership.** Text-book, Leading Cases, Lectures. Third term, Junior year.—MR. WOOD.

9. **Principles of International Law.** Fall term, Seniors and Juniors.—PROFESSOR HEIM.

10. **Roman Law.** Third term, Seniors and Juniors.—PROFESSOR BALLENTINE.

11. **American Civics.** A study of the frame of Federal and State Government.—PROFESSOR COLESTOCK.

12. **American Constitutional Law.** First term, Seniors and Juniors.—PROFESSOR HEIM.

13. **Comparative Constitutional Law.** Second term, Seniors and Juniors. A comparison of the Constitutions of England, France, Germany, Switzerland, and the United States.—PROFESSOR HEIM.

#### IV. DEPARTMENT OF ECONOMIC AND POLITICAL SCIENCE.

EPHRAIM M. HEIM, PH.D., PROFESSOR.

1. **Economics, I.** General Course, devoted chiefly to problems of Production and Distribution.

2. **Economics, II.** Money and Banking. Prerequisite, Course I.

3. **Economics, III.** Public Finance. Financial Administration, Taxation, and Public Debts. Alternating with Course II. Prerequisite, Course I.

4. **Corporate Finance and Commercial Law.** Organization and Management of Corporations. Corporation Finance. Form and Nature of Securities and Commercial Paper. Funding Operations, Accounting and Auditing. Nature and Operations of Special Groups of Corporations, such as Public Service Companies, Financial Institutions, Insurance, etc.

5. **Transportation and Commerce.** Development of Foreign and Inland Commerce and Transportation. Organization and Methods of Railway Transportation. Theory of Rates, and Methods of State Control. Ocean Transportation, Shipping, and Navigation Acts. Commercial Geography. For Seniors only.

6. **Industrial History of United States.** Development of Business Organization. Evolution of Types of Industry. Changes in Land Tenure; in the Distribution and Marketing of Products; in Forms of Exchange; in Insurance; in Organization of Labor Force; in Legislative Policy. Race Elements in American Industry.

7. **Economics.** Two hours a week. One of the following subjects will be studied: (1) English Economic History; (2) Socialism; (3) Labor Legislation.

8. **American Civics.** A study of the American frame of Federal and State Government.—PROFESSOR COLESTOCK.

9. **American Constitutional Law.** Cooley's Elements of Constitutional Law. A study of the law of the Federal Constitution.

10. **Comparative Politics.** A comparative study of the Constitutions of England, France, Germany, Switzerland, and the United States.

11. **Municipal Government.** Organization of City Government. Problems of Administration, Municipal Functions. Relation to the State. Second term; five hours. Seniors and Juniors.

12. **International Law.** First term, five hours. Seniors and Juniors.



**13. Political Parties and Party Government.** Origin and Growth of Party Government in the United States. Basis of Party Division. Rise and Decline of American Parties. Organization and Machinery of Party Government. European Parties. Lectures, one hour a week, throughout the year. Required in Jurisprudence Course, elective to Sophomores in other Courses.

**14. Political Science.** Minor Courses, two hours. One of the following will be given: (1) Elements of Political Science; (2) Administrative Law.

**15. American Diplomacy.** Minor Course, two hours.

## V. DEPARTMENT OF SOCIOLOGY AND LOGIC.

WILLIAM EMMET MARTIN, L.H.D., PROFESSOR.

**1. Anthropology, Descriptive and Physical.** Elective to Sophomores. Third term, five hours.

**2. Sociology, Principles and Theory.** Elective to Seniors and Juniors. First term, five hours.

**3. Charities and Reform.** Seniors and Juniors. Second term, one hour. Prerequisite, Course 2.

**4. Municipal Sociology.** Seniors and Juniors. Second term, five hours.

**5. History of Art.** Lectures. Sophomores. Three terms, one hour. I. Painting; II. Sculpture; III. Architecture.

**6. Logic, Deductive and Inductive.** Second term, five hours.

**7. Scientific Method, with Exercises in Analysis.** Seniors and Juniors. Second term, five hours.

## VI. DEPARTMENT OF HISTORY.

HENRY THOMAS COLESTOCK, PH.D., PROFESSOR.

History is studied as the gradually unfolding life-story of the race.

**1. Oriental History.** A survey of the civilizations along the Nile and the Euphrates, including Egypt, Babylonia, Assyria, Phœnicia, and Persia, constituting an introduction to biblical and classical times. First term, five hours.

**2. Hebrew History and Literature.** First term, five hours.—  
PROFESSOR PHILLIPS.

3. **New Testament History and Literature.** Second term, five hours.—PROFESSOR PHILLIPS.

4. **Greek Political and Constitutional History.** First term, five hours.—PROFESSOR HAMBLIN.

5. **Roman History.** Second term, five hours.—PROFESSOR BALLENTINE.

6. **Roman Private Life.** Second term, five hours.—PROFESSOR BALLENTINE.

7. **Medieval Europe.** General survey of Western Europe, from the fourth to the thirteenth century, with especial attention to the institutional life of the people and the progress of civilization. First term, five hours.

8. **Modern Europe to 1789.** From the thirteenth century to the opening of the French Revolution. Considers especially the Renaissance, the Protestant Reformation, and conditions combining to produce the French Revolution. Second term, five hours.

9. **Modern Europe since 1879.** The French Revolution, the Napoleonic era, Unification in Germany and Italy. Progress in civilization, and in social and industrial conditions. Third term, five hours.

10. **History of England, a.** Political and industrial development of the English people from the earliest times. Second term, five hours.

11. **Constitutional History of England, b.** With special reference to the growth and development of the present form of constitutional government in England. Second term, five hours. Alternates with Course 10.

12. **American Colonial History, a.** European background of American colonization. Political, industrial, and constitutional conditions in the English colonies. Causes and results of the Revolutionary War.

13. **American Constitutional History, b.** Origin of the Federal Constitution. Growth of nationality. Conflict between nationality and state sovereignty. Issues involving the interpretation of the Constitution.

14. **Industrial History of United States.** Development of Business Organization. Evolution of Types of Industry. Changes in Land Tenure; in the Distribution and Marketing of Products; in Forms of Exchange; in Insurance; in Organization of Labor Force; in Legislative Policy. Race Elements in American Industry.—PROFESSOR HEIM.

15. **Teachers' Course in American History.** General survey of American history, designed to meet the needs of those who expect to teach history in secondary schools. Minor Course.

16. **The Far East.** Survey of present conditions, social and constitutional, in Japan and China. Minor Course.

17. **Historical Biography.** Detailed study of one or more important historical characters. Minor Course.

18. **Present Conditions in Russia.** Minor Course.

## VII. THE GREEK LANGUAGE AND LITERATURE.

THOMAS FRANKLIN HAMBLIN, A.M., LL.D., PROFESSOR.

Students entering without preparation in the language can begin Greek in the College.

1. **Greek for Beginners.** An introduction to the Greek language based upon graded selections from Menander, Xenophon, Plato, Herodotus, and the New Testament. By an intensive study of the essential forms, a careful study of the vocabulary of representative Greek authors, and reading easy selections at sight, it is intended to cover in one year an equivalent of the usual Preparatory Course. Five hours a week through the first year.

2. **Plato.** The *Apology* and *Crito*. Special topics in Greek syntax. The life and influence of Socrates, Selections from the *Memorabilia* at Sight. First term, five hours a week.

3. **Homer.** Three or four books of the *Iliad* or *Odyssey*. Homeric forms. A study of life in the times of Homer. Second term, five hours a week.

4. **Lysias.** Select orations, with sight reading and Prose Composition. A study of Attic Oratory. Third term, five hours a week.

5 and 6. **Greek Drama.** One play each of *Æschylus*, *Euripides*, and *Aristophanes*. Study of the Greek drama, theater, and meters. The development of drama. First two terms, five hours a week, alternating with 7, in alternate years.

7. **New Testament Greek.** Translation of the synoptic Gospels; interpretations; Burton's *Moods and Tenses*; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. First two terms in alternate years, alternating with 5 and 6.

8. **Greek History.** Political and Constitutional History of Greece. Influence of Greek institutions and thought on the world. Third term, five hours a week.

**9. Greek Literature in English.** A course especially designed for students in the Philosophical and Scientific Courses, that they may become acquainted with some of the Greek masterpieces. The best translations will be studied and explained, and informal lectures will be given on various phases of Greek Literature. Third term, Senior and Junior years.

#### BIBLICAL HISTORY AND LITERATURE.

**1. New Testament Greek.** Translation of the synoptic Gospels; interpretations; Burton's *Moods and Tenses*; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. Two terms. Elective to Seniors and Juniors.—PROFESSOR HAMBLIN.

**2. Hebrew History and Literature.** Beginning of the nation to the Greek period. Seniors and Juniors. First term, five hours.—PROFESSOR PHILLIPS.

**3. New Testament History and Literature.** Greek period to close of Paul's life. Seniors and Juniors. Second term, five hours.—PROFESSOR PHILLIPS.

**4. Gospels and Post-Pauline Writings.** Seniors and Juniors. Third term, five hours.—PROFESSOR PHILLIPS.

#### VIII. THE LATIN LANGUAGE AND LITERATURE.

FRANK ERNEST ROCKWOOD, LL.D., PROFESSOR  
EMERITUS.

FLOYD GEORGE BALLENTINE, PH.D., PROFESSOR.

There are four terms of required work in Latin and eleven of elective in the Classical and Latin Philosophical Courses. Special courses, subject to change from time to time, are also offered.

A. Candidates for the Degree of Bachelor of Science take Latin daily during the Freshman year. This course is intended for students who have passed only in the General Requirements in Latin, for admission. The work consists in the study of *Cicero* (*selected speeches*) and *Vergil*, or *Livy*, and *Prose Composition*.

B. The following courses are designed for students in the Classical and Philosophical Courses, but are also open as electives to students in the Science Course who may be qualified to take them:

**1. Cicero. *De Senectute*.** *Livy*, Book I. Review of special topics in Latin Grammar. Oral and written exercises in Prose Composition, based upon the text. Translation at sight and at hearing. First term, Freshman year, two divisions.

2. **Livy.** Books XXI and XXII. Latin Prose Composition, based upon the text. Roman history: Special chapters in Liddell. Second term, Freshman year, two divisions.

3. **Cicero.** *De Officiis*. Cicero's standing as a philosopher. Translation at sight. Latin Prose Composition, based upon the text. Third term, Freshman year, two divisions.

4. **Horace.** Selections from the Odes, Satires, and Epistles. Prosody; Historical Outlines of the Latin Language and Literature; Wilkins' Primer; Lectures. First term, Sophomore year, two divisions.

5. **Roman History.** The work is based on Meyer's Rise and Fall of Rome. Mommsen, Bury and Gibbon are used for supplementary reading. Second term, Sophomore year.

6. **Quintilian.** Books X and XII. Roman Literature. Second term; open to those who have taken Course 4; alternating with 12.

7. **Juvenal.** Selected Satires. Third term; open to those who have taken Course 4.

8. **Roman Philosophy.** Cicero and Seneca. First term; open to Seniors and Juniors; alternating with 11.

9. **Plautus and Terence.** Selected Plays. Lectures on such subjects as the life and influence of Terence, the Roman theatre, the production of comedy, etc. Second term, open to Seniors and Juniors; alternating with 14.

10. **Latin Inscriptions.** Allen's Remnants of Early Latin; Egbert's Manual. Third term; open to Seniors and Juniors; alternating with 13.

11. **Tacitus.** Annals. Translation at sight. Roman History. First term; open to Seniors and Juniors; alternating with 8.

12. **Latin Poets.** Crowell's Selections. Roman Literature. Second term; open to those who have taken Course 4; alternating with 6.

13. **Teachers' Course in Latin.** Special topics in grammar with practical exercises in Cæsar, Cicero, Vergil. Third term; open to Seniors and Juniors; alternating with 10.

14. **Roman Private Life.** Lectures; required reading; one report, involving elementary investigation. Second term; open to Seniors and Juniors; alternating with 9.

15. **Roman Law.** Morey's Roman Law; Sandar's Institutes of Justinian; lectures and reports. Third term; open to Seniors and Juniors; required in the Course of Jurisprudence.



16. **Christian Writers.** Tertullian and Latin Hymns, one hour.
17. **Classical Philology.** Introductory Course, one hour.

## IX. ENGLISH.

ENOCH PERRINE, LITT.D., PROFESSOR.

CHARLES CARPENTER FRIES, A.M., PROFESSOR OF RHETORIC.

BROMLEY SMITH, A.M., ASSISTANT PROFESSOR IN ORATORY.

GARDNER WADE EARLE, A.M., INSTRUCTOR IN RHETORIC.

### A. THE ENGLISH LANGUAGE AND LITERATURE.

ENOCH PERRINE, LITT.D., PROFESSOR.

1. **English Literature.** Introductory Course. Designed to give a general knowledge of the history of English Literature from the Elizabethan to the Victorian periods, inclusive. Required, first term, Sophomore.

2. **English Literature from 1832.** For those who have taken Course 1; alternating with Course 13.

3. **English Literature, 1790-1832:** Wordsworth, Coleridge. Shelley, Byron. For those who have taken Course 1, and alternating with Course 14.

4. **English Literature, 1714-1790.** For those who have taken Course 1, and alternating with Course 15.

5. **English Literature, 1600-1660.** For those who have taken Course 1, and alternating with Course 8.

6. **Shakspeare.** Reading of several plays, chiefly as studies in interpretation. For Seniors and Juniors.

7. **Shakspeare.** His mind and art. Critical study of *A Midsummer Night's Dream*, *Hamlet*, and *Tempest*. For Seniors and Juniors.

8. **The English Drama.** Its development from the earliest times to Shakspeare. For those who have taken Course 1, and alternating with Course 5.

9. **Teachers' Course in English.** Designed to familiarize the student with those authors, both in the way of theory and practice, that are required for entrance to College. For those who have taken Course I, and alternating with Course 10.

10. **Principles of Literary Criticism.** For Seniors and Juniors, alternating with Course 9.

11. **American Literature,** with special reference to the national period. For those who have taken Course 1,



12. **Journalism**, a study and practice of the various forms illustrated in the metropolitan "dailies," together with proof-reading, study of the functions of editors, and readings in the history of great American journalists and journals. For Juniors and Seniors who have taken Course 1.

13. **Anglo-Saxon**. Old English Language and Literature, with special elective in Beowulf. For Juniors and Seniors who have taken Course 1.

14. **Chaucer**. Middle English Language and Literature, with readings in Langland and Gower, and in Lounsbury's *The English Language*. For those who have taken Course 1.

15. **Modern English**. Special comparative readings in Modern English Prose. For those who have taken Courses 13 and 14, or who show special fitness for the work.

16. **Foreign Literature in English**. Lectures on some of the world's masterpieces are given to the Seniors on Monday mornings during the third term. Alternating with this Course lectures are given on Modern English Fiction.

17. **Periods of English Literature**. Special work is given in different periods of English Literature to those who have passed with credit in Courses 1 and 2.

18. *Le Public et les Hommes de Lettres en Angleterre, 1660-1744*; Beljame; or *Ecrivains Modernes de l'Angleterre*, Montegut. Minor.

19. **Shakspeare**. Fünf Vorlesungen von Bernhard ten Brink. Minor.

## B. RHETORIC AND ORATORY.

CHARLES CARPENTER FRIES, A.M., PROFESSOR OF RHETORIC.

BROMLEY SMITH, A.M., ASSISTANT PROFESSOR IN ORATORY.

GEORGE WADE EARLE, A.M., INSTRUCTOR IN RHETORIC.

MRS. LEO ROCKWELL,

AGNES CARSWELL,

AILEEN MARGUERITE LOTT,

MARION ELLENBOGEN,

WALTER DRY ROOS,

ASSISTANTS IN RHETORIC.

## A.—COURSES IN RHETORIC AND COMPOSITION.

1. **Rhetoric and English Composition**. Introductory Course. Themes, weekly recitations, and consultations. Three terms; one

hour. Required of Freshmen. Students who show good preparation are admitted to a special section, in which more advanced work is given.

2. **English Composition.** Themes, recitations, and consultations. Required of Sophomores.

(a) First term; five hours. Special attention to technical writing. Students in Engineering and in Biology.

(b) Second term; five hours. Students in the literary courses.

3. **Argumentation.** Briefs, forensics, and discussion of the principles that underlie argument. Third term; five hours. Open to students who have passed in 1 and 2.

4. (a) **English Composition.** Advanced Course. Third term; five hours. Open to Seniors and Juniors.

4. (b) **Technical Writing.** Extending through three terms of the Freshman year. Optional with Modern Languages.

5. **Theses.** Every member of the Junior and of the Senior Class writes a thesis. The Junior theses contain not less than two thousand words, the Senior theses not less than three thousand words. The subjects are chosen in conjunction with the heads of the departments to which the subjects belong. Upon these theses are based the Junior Exhibition orations and the commencement orations. The subjects of the theses are presented to the Professor of Rhetoric before October 22 and an outline of each thesis is presented to the Professor of Rhetoric at the close of the first term. The completed theses are handed in before March 1. They are examined first by the heads of the departments to which the subjects belong and afterwards by the Professor of Rhetoric.

6. **English Prose.** Studies in the development of prose style. Five hours. Open to Seniors and Juniors.

7. **Diction and Usage.** An historical approach to questions of usage and style. Five hours. Open to Seniors and Juniors.

8. **Teachers' Course.** The theory of Rhetoric and the teaching of English Composition. Five hours. Open to Seniors who have had 3, 6, and 7.

#### B.—COURSES IN ORATORY.

The aim is to train the student to speak effectively in the pulpit or upon the platform or at the bar. All instruction is based upon the principle that impression precedes and determines expression. Each student receives individual attention during the first half of the course in elocution, during the latter half in oratory. Special

attention is given to debate. Each student is urged to take an active part in the work of the Literary Societies.

The ultimate object of the *physical culture* is to secure a good presence and the ability on the part of the voice and body to interpret correctly the conceptions of the mind.

#### FRESHMEN.

1. **Physical Culture.** Exercises for securing correct position, and harmony of movements and attitudes; exercises for breath control and vocal culture and for grace in gesture.

2. **Public Speaking.** Study of the fundamentals of public speaking; delivery of short extracts from masterpieces of oratory, aiming to secure directness, earnestness, and dignity of address. Required, first and second terms, one hour.

3. **Public Speaking.** Delivery of complete orations illustrating and applying the principles studied in the first and second terms. A prize is offered to the young man and one to the young woman of the Freshman Class who excel in the delivery of these orations. Required third term.

#### SOPHOMORES.

4. **Public Speaking.** Close analysis and study of the details of public speaking; study of the various styles of delivery and of the different forms of discourse. Delivery of selected extracts from masterpieces illustrating each. Extemporaneous speaking. Reviews and continuation of the physical culture of Course 1. Required, first term, one hour.

5. **Public Speaking.** Study of narration, description and argumentation, delivery of selections illustrating each, preparation and delivery of original narrations and descriptions, extemporaneous speaking. Required, second term, one hour.

6. **Public Speaking.** Delivery of complete argumentative selections. Preparation for and participation in debate. A prize is awarded to the young man of the Sophomore Class who shall excel in the delivery of an assigned selection in argumentation. A prize is awarded to the young woman of the Sophomore Class who shall excel in the delivery of an assigned selection in narration. Third term.

7. **Public Address.** The various forms of addressing the public are studied. Beginning with open letters and editorials, the class

advances to presentations, acceptances, nominations, dedications, inaugural addresses, institute talks, banquet toasts, eulogies, commemorative orations, etc. Each student prepares and delivers before his class specimens in the above forms. Third term, five hours; Sophomores.

**8. Practical Oratory.** Briefs and notes are made the basis for extemporaneous addresses; Congressional speeches and modern occasional orations are outlined and studied. The application of rhetorical and of oratorical principles in their connection with logic is considered. Special work in line with the student's intended profession is given. A limited field, historical, economic, or otherwise, is assigned to each student for development. When his orations have been examined and corrected, the student delivers them before the class. First term, five hours; Seniors and Juniors.

**9. Interpretative Reading.** The use of the voice in bringing out the meaning of the best literature is obtained by practice in class. Attention is given to the pedagogical and psychological aspects of reading. Second term, five hours; Seniors and Juniors.

#### JUNIORS.

**10. Prize Contest.** A prize contest in Oratory is held in the third term by Juniors, appointed on the ground of superiority in composition and elocution as shown during the preceding terms of the college Course.

**11. Prize and Honor Debate.** During the year there are three debates by Juniors, the last of which is a prize and honor debate.

**12. Oral Debates.** Briefs, Debates, and Criticisms. The Professor of Economic and Political Science coöperates in this Course. First term; one hour.

The contestants for the Junior Prize are selected from the students who take this Course.

#### SENIORS.

**13. Honors in Debating.** During the year an elective course in debating is offered to Seniors. The last debate is public.

**14. Prize in Oratory.** A prize is offered for the best oration of those delivered by the Senior orators at Commencement, regard being had equally to subject-matter, style, and delivery.

## XI. DEPARTMENT OF MODERN LANGUAGES.

BENJAMIN W. GRIFFITH, A.M.,

PROFESSOR OF FRENCH.

LEO LAWRENCE ROCKWELL, A.M.,

ASSISTANT PROFESSOR IN SPANISH AND GERMAN.

PAUL G. STOLTZ, A.M.,

INSTRUCTOR IN ITALIAN.

## A.—GERMAN.\*

1. **Elementary Course.** Grammar; German Prose; practice in writing German. Three terms.

2. **German Prose.** Grammar; practice in writing German, reading of Prose and Poetry. Elective to those who have taken Course 1, or its equivalent.

3. **German Prose and Poetry.** Grammar; practice in writing German. Elective Course for those who have taken Course 2.

4. **Historical German Prose.** Practice in writing German. Elective Course for those who have taken Course 3.

5. **Modern German Novelists.** Practice in writing German. Elective Course for those who have taken Course 4.

6. **Schiller (a).** Practice in writing German; lectures. Elective Course for those who have taken Course 4.

7. **Schiller (b).** Practice in writing German; lectures. Elective Course for those who have taken Course 4.

8. **Goethe (a).** Practice in writing German; lectures. Elective Course for those who have taken Courses 5-7.

9. **Goethe (b).** Shorter Poems, Dichtung und Wahrheit, Faust I; lectures. Elective Course for those who have taken Course 8.

10. **Lessing.** Practice in writing German; lectures. Elective Course for those who have taken Course 9.

11. **Kleist and Grillparzer.** Practice in writing German; lectures. Course 11 alternates with Course 8.

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\* Owing to the decline in the number studying German, courses will be given only when a sufficient number elect them. But in any event enough German will be given to enable the student to enter Medical Colleges which require German for entrance.



12. **Hebbel and Ludwig.** Practice in writing German; lectures. Course 12 alternates with Course 9.

13. **Heine and Uhland.** Practice in writing German; lectures. Course 13 alternates with Course 10.

14. **German Biological Science.** (Biology 21.)

15. **German Chemical Science.** (Chemistry 16.)

16. **Scientific German.** Designed especially for students in the Engineering Courses. Two hours, throughout the year.

#### B.—FRENCH.

1. **Elementary Course.** Grammar; French prose; practice in writing French.

2. **French Prose.** Grammar; practice in writing French. Elective Course for those who have taken Course 1.

3. **French Prose and Poetry.** Grammar; practice in writing French. Elective Course for those who have taken Course 2.

4. **Historical and Critical French Prose.** Practice in writing French. Elective Course for those who have taken Course 3.

5. **Authors of the XIX Century.** Practice in writing French. Elective Course for those who have taken Course 4.

6. **Corneille and Racine.** Practice in writing French; lectures. Elective Course for those who have taken Course 5.

7. **Molière.** Practice in writing French; lectures. Elective Course for those who have taken Course 6.

8. **Authors of the XVIII Century.** Practice in writing French. Lectures. Elective Course for those who have taken Course 7.

9. **A View of French Literature.** Rapid reading; practice in writing French; lectures. Elective Course for those who have taken Course 8.

#### C.—SPANISH.

1. **Elementary Spanish.** Grammar, conversation, translation of easy prose. Through the year, five hours.

2. **Spanish Prose.** Advanced Course, Translation, Composition, Conversation. Second year, five hours. The courses in Spanish 1, 2, and 3 are open to Freshmen, optional with German and French.

#### D.—ITALIAN.

**Elementary Italian.** Grammar, Conversation, Translation of easy prose. Through the year, five hours.



## XII. DEPARTMENT OF MATHEMATICS.

WILLIAM CYRUS BARTOL, PH.D.,  
PROFESSOR OF MATHEMATICS AND ASTRONOMY.

CHARLES ARTHUR LINDEMANN, A.M.,  
PROFESSOR OF APPLIED MATHEMATICS.

FRANK MORTON SIMPSON, SC.M.,  
PROFESSOR OF PHYSICS AND DRAWING.

WALTER KREMER RHOADES, A.M., E.E.,  
PROFESSOR OF ELECTRO-TECHNICS.

FRANK EUGENE BURPEE, A.M.,  
PROFESSOR IN MECHANICAL ENGINEERING.

MARTIN LINNÆUS DRUM, SC.M.,  
PROFESSOR IN SURVEYING.

HARRY SCHEIDY EVERETT, A.M., SC.M.,  
ASSISTANT PROFESSOR OF MATHEMATICS.

FRANK EDWARD STETLER, E.E.,  
INSTRUCTOR IN DRAWING.

HOWARD LAVERNE HARER,  
CLYDE EARL RUSSELL WENRICH,  
ASSISTANTS IN SURVEYING.

THOMAS MAURICE ORCHARD,  
FURMAN WATSON SHAW,  
MARTIN KELLER MOHLER,  
GEORGE WALTER LEES, JR.,  
JAMES MILTON BORTZ,  
ASSISTANTS IN DRAWING.

ROBERT GONZALES CARULLA,  
BENJAMIN JAMES WILSON,  
THEODORE CORTLANDT WILLIAMS,  
GEORGE MERRILL KUNKEL,  
ASSISTANTS IN SHOPWORK.

VORIS BLAINE HALL,  
HENRY CLAY LUCAS,  
ASSISTANTS IN PHYSICS.

**1. Solid Geometry.** The course includes the geometry of solids with plane surfaces, the cone, the cylinder, the sphere, the spherical triangle, and conic sections. Freshman year, Classical Course, first term, five hours.

**2. Algebra.** The topics are ratio, proportion, variation, progressions, theory and development of functions, logarithms, differ-

entiation of algebraic functions, indeterminate equations, series, higher equations. Freshman year, first or second term, five hours.

3. **Determinants and Advanced Algebra.** Open to students who have completed Course 2. Second term, five hours.

4. **Trigonometry.** The course includes plane trigonometry with application to problems in mensuration and surveying, and spherical trigonometry with applications to problems in astronomy. Freshman year, second or third term, five hours.

5. **Analytical Geometry.** The student is taken through the properties of the right line, the circle, and the conic sections, and higher plane curves. The course is intended to give a clear conception of the methods of Cartesian analysis and a knowledge of its results. Freshman year, third term, five hours; or Sophomore year, first term, five hours.

6. **Differential Calculus.** The course includes higher derivatives and functions of several variables, infinite series, maxima and minima. Prerequisite, Course 5. Sophomore year, second term, five hours.

7. **Integral Calculus.** The course includes the methods of integration, rectification and quadrature of plane curves, surfaces and solids of revolution, and applications to problems in Physics and Mechanics. Sophomore year, third term, five hours:

8. **Higher Analytics.** The Course covers the geometry of three dimensions, surfaces of revolution and higher plane curves. Junior Advanced Calculus is included in Course 8; first term, five hours.

9. **Differential Equations.** A course with mechanical applications. Senior year, first term, five hours. This course alternates with Course 8.

10. **Descriptive Astronomy.** The aim of the course is to present in concise form a synopsis of astronomical knowledge to date. Lectures. Sophomore year, Arts and Science courses, first and second terms, one hour.

11. **General Astronomy.** The subject is taught by text-book, with illustrations in the observatory. Freshman year. Third term, five hours.

12. **Practical Astronomy.** Students use the ten-inch telescope and three-inch transit of the observatory. Open to all who have completed Course 11. Third term, five hours.

13. **Geodetic Astronomy.** The course includes the use of the astronomer's transit and micrometer; observations for Time; conversion of Time; Latitude, Longitude, Azimuth and their geodetic

determination; figure and dimensions of the Earth; use of the American Ephemeris; practice in the Observatory. Prerequisites, a course in Surveying and one in the Elements of Astronomy. Seniors, first term, five hours.

**14. Teachers' Course.** (a) History of Mathematics. (b) Arithmetic, its status at present in the schools and methods of teaching it. (c) Algebra, a study of its typical parts. (d) Geometry, its basis; methods; inventional geometry. (e) Trigonometry and its applications.

**15. Plane and Topographical Surveying.** Ten hours per week for thirteen weeks. Text-books, Breed & Hosmer. Recitations on text. Lectures, tests. Field practice in each position on corps using transit, Y, dumpy, and hand levels, plane table and compass in surveys for area, for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments.

**16. Geodetic Surveying.** Minor course. Sophomore Civil Engineering, one hour throughout the year.

**17. Railroad Surveying.** Recitation on text. Lectures, tests, Computation, draughting and field practice of simple, compound, parabolic, and easement curves. Field practice in each position on corps making a preliminary surveying for a cross-country railroad one and three quarter miles in length. Computations and draughting for determining paper location, fixed grades, amount of excavation, vertical curves, questions of haul, etc. Field practice in putting in paper location and setting slope stakes. An inspection of portions of the Reading and Pennsylvania tracks in a study of switches, Y's and crossings.

**17a.** A Course in Surveying specially adapted to their needs is offered as an elective to the Seniors in Chemical, Electrical, and Mechanical Engineering.

**18. Mine Surveying.** Problems in Mine Surveying, such as plumbing the shaft, location of borehole, lining up chambers, driving tunnels, are worked out in class and with the instruments. Plotting of notes forms a part of the work. Senior Civil Engineering, third term, five hours for six weeks.

**19. City Surveying.** The common problems incidental to city engineering are considered, field work, notes, reports, drawing specifications, and estimates being required. Senior Civil Engineering, third term, five hours for six weeks.

**20. Descriptive Geometry.** A study of the representation of

lines, plane surfaces, solids and sections of solids; the projection of points, lines, and surfaces; practical problems. Engineering Courses, Sophomore year, second term, five hours, and Junior year, first term, five hours.

**21-23. Courses in Drawing.** Extending through the Freshman year of the Courses in Engineering, and required of all candidates for the first degree in Civil, Mechanical, or Electrical Engineering. Ten hours a week:

(1) **Linear and Free-hand.** A course in drawing to give the student facility in the use of instruments; Geometrical problems; cross-sectioning; shading; isometric drawing; sketching from models.

(2) **Lettering.** The form and proportion of standard letters, structural details; methods of spacing; laying out titles.

(3) **Architectural Drawings.** Plans, elevations, and perspective drawings; copy of standards.

(4) **Pen and Color Topography.** Topographical signs; methods of hill shading; surface forms by contours and in color and pencil; enlarging and reducing maps, rendering in water colors, sepia, and charcoal.

(5) **Tracing and Blue Printing.** Photographic methods of the Architect and Engineer.

**24. Architectural Design.** The design of brick and stone structures, including the preparation of plans and specifications. Junior Engineering, one hour, first and second terms.

**25-27. General Physics.** (Three terms.) These courses in Physics are required in the Engineering Courses and are elective in the other Courses. Instruction is given in the Laboratory, supplemented by recitations and lectures:

(a) **LABORATORY.** The Laboratory instruction extends throughout the year and includes experiments illustrating the general laws in all branches of Physics. The experiments are largely quantitative and use is made of instruments of precision. The work is entirely individual. The student is required to take notes in the Laboratory, elaborating them outside and presenting for criticism from time to time.

(b) **RECITATIONS.** Recitations supplement the laboratory work. The study of a text covering the theoretical and mathematical side of the subject is required.

(c) **LECTURES.** Frequent lectures are given in which use is made of lecture-room apparatus. All important phenomena are illustrated and experimental demonstrations of the principal laws are presented.

- (1) **Mechanics and Heat.** First term.
- (2) **Electricity and Magnetism.** Second term.
- (3) **Acoustics and Optics.** Third term.

**28-31. Advanced Physics.** The course extends throughout the year and assumes that the student has completed Courses 25-27 or the equivalent. Instruction is given chiefly in the Laboratory. Students are instructed in the use of instruments of precision employed in Heat, Light, Electricity, and Magnetism. The work in the Laboratory is supplemented by written reports in which both general and theoretical results obtained are discussed. These reports afford the basis for criticism of the work. The work must be pursued in such order as the appointments of the Laboratory may require.

**28. Electrical Measurements.** In this course the student is required to make a thorough study of the instruments of precision used in electrical testing laboratories. The Laboratory is supplied with a large number of galvanometers of the various types, standard cells, standards of resistance, condensers, bridges of the various types, Kelvin Balance, Siemens Dynamometer, variable standard of self-inductance, potentiometers, etc. In brief, the work covers

(a) Measurement of current, E. M. F., Resistance, Capacity, Induction.

(b) Study of primary and secondary batteries and standard cells.

(c) Tests and calibration of commercial instruments.

(d) Magnetic behavior of iron. Hysteresis.

**29. Heat.** A thorough study of the first and second laws of thermodynamics is made. The laboratory work consists of exhaustive studies in *thermometry*, including temperature measurements by use of the platinum resistance thermometer and the thermo-couple. *Calorimetry*, including the determination of heat values of *solid*, *liquid*, and *gaseous* fuels. Also the steam calorimeter. *Mechanical equivalent of heat* by means of the continuous flow calorimeter and the Rowland apparatus.

**30. Light.** The student is instructed in the use of the spectrometer, spectroscope, interferometer, and photometer. A careful study is made of the candle-power of various types of incandescent lamps and gas burners using the Bunsen, Jolly, and Lummer-Brodhun screens.

**31. Spectrum Analysis.** Recitation one hour, Laboratory eight hours per week.

Comparison, observation, and mapping of emission spectra with the spectroscope; the qualitative analysis of unknown chemical mix-



tures and miners; spark and arc spectra of solids; sparks and flame spectra of solids, liquids and gases; absorption spectra of certain mixtures and coloring materials.

The equipment comprises a fine spectroscope by Brashear, a Rowland grating of 14,438 lines to the inch, a spectrometer by the Geneva Society, prisms of all types by the best makers, absorption cells, etc.

**32. Strength of Materials.** Simple and combined stresses are considered, along with their resulting deformations, methods of testing the materials of construction are outlined, many problems in the design and investigation of beams, columns, shafts, footings, etc., are solved, reinforced concrete receiving special attention. First term, Junior Engineering, five hours.

**33. Masonry Construction.** The materials of masonry construction and their preparation and use receive attention; a study is made of foundations—ordinary, pile, and under water; masonry dams, retaining walls, abutments, piers, culverts, and elastic arches in stone and concrete are designed and investigated, drawings being prepared for the same. Second term, Junior Civil Engineering, five hours.

**34-36. Bridges and Buildings.** The first term is devoted to Graphical Statics, problems being worked out daily in the drafting room. The work of the second term consists in the determination of stresses in framed structures by means of graphic and algebraic methods. The third term is spent in the calculation and designing of several roof and bridge trusses. Senior Civil Engineering, three terms, five hours.

**37. Roads and Pavements.** The economic location, design, and construction of roads and pavements are considered, comparisons being made between the various methods and materials, sections of roads and streets are surveyed and from the notes taken plans, specifications, and estimates for construction and paving are prepared. First term, Junior Civil Engineering, five hours.

**38. Hydraulics and Hydraulic Motors.** This course includes the theory of Hydrostatics and Hydraulics, the flow of water over weirs, through orifices and tubes, and in pipes, canals, and rivers; the measurements of water-power; water wheels and turbines. Senior Engineering, second term, five hours.

**39. Water Supply and Sanitary Engineering.** Under the head of the collection and storage of water are taken up quantity of water required, rainfall, flow of streams, storage and evaporation of water, supplying capacity of water sheds, springs, and wells. The



flow of water in streams, pipes, and channels is discussed, as also the practical construction of water works. A study is made of the various methods of sewage disposal. Third term, Junior Engineering, five hours.

**40. Contracts.** In this course are given the principles of Common Law as applied to contracts. Third term, Senior Engineering, one hour.

**41. Theoretical Mechanics.** Differential and integral calculus are required for admission to this course. The first part of the term is given to ordinary differential equations. This is followed by the study of forces, couples, moment of inertia, and flexible cords, together with the geometry of motion, dynamics of machinery, work, energy, friction, and impact. Juniors, first term, five hours.

**42. Direct Current Machinery.** This course must be preceded by the Course in Electrical Measurements or its equivalent. Attention is given to the principles of measuring instruments and their calibration, absolute measurements of inductance, principles of dynamo electric machinery, structural details and performances, characteristics together with related problems. Lectures, recitations, and laboratory work. Juniors, Engineering, second term, five hours.

**43. Alternating Current Generators, Transformers, and Motors.** Electromotive force and current curves are traced, and their modifications as determined by various conditions of the receiving circuit are noted carefully. Efficiency, regulation, and general performance of alternating current apparatus are studied in detail. This course must be preceded by the course in Direct Current Machinery. Lectures, recitations, and laboratory exercise. Juniors, Engineering, third term, five hours.

**44. Design of Electrical Machinery.** During the first part of the work in design type forms of electromagnets, direct current generators and motors are computed and drawings made of the electrical and mechanical details. In the second part of the course, type forms of alternating current generators, transformers, and induction motors are computed and drawn in detail. Exercises are given in the winding of transformers and induction motors. Lectures, computing exercises, drawing, and shopwork. Seniors, Electrical Engineering, first and second terms, five hours.

**45. Generating Stations and Sub-stations, Distribution of Electricity, Storage Batteries.** Comparative performance of the important prime movers, and the economic management of generating plants and sub-station equipment are studied in detail and practical estimates made. Attention is also given to the application of sec-

ondary cells to the problems of distribution. Seniors, Electrical Engineering, first term, five hours.

**46. Telegraph, Telephone, Railway Signal, and Related Apparatus.** Attention is given in detail to the electrical connections, and principles of operation of the various types of apparatus. Efficiency tests are made and the graphs plotted. Recitations and laboratory work. Seniors, electrical Engineering, second term, five hours.

**47. Electric Lighting, Construction, Wiring, and Economics.** The various systems and arrangements of wiring for lighting and power distribution are investigated, and practical problems in the economics of wiring and line construction are computed. Typical systems are worked out in detail. Seniors, Electrical Engineering, third term, five hours.

**48. Electric Railways, Construction, Operation, and Economics.** This course deals with the theory and design of the different types of electric railway construction. Analysis of train performance, types of control, systems of braking, and methods of motor suspension are studied in detail. The economics of the operation and maintenance of American electric railways is considered in the conclusion of the Course. Seniors, Electrical Engineering, third term, five hours.

**49. Machine Design, Machine Tools.** Elementary machines, generation of tooth, outline in gears, and aggregate combinations are studied in detail, followed by the computations of type forms of cutting and grinding tools. Lectures, recitations, and drawing. Juniors, Electrical Engineering, throughout the year, one hour.

**50. Boilers, Steam, Gas, Air, and Oil Engines, Valve Gears, and Governors.** This is a general course dealing with the thermodynamics of the heat engine, the theoretical, indicated, and actual horsepower of the steam engine, and methods of calculating each. A study of the different types of steam boilers, and how to calculate and use them, is made. The general subject of combustion is taken up and calculations made on different kinds of fuel, both from proximate and ultimate analyses. A large number of problems relating to steam engines, boilers, and power plants are given, and three or four actual tests on engines and boilers are made and reports are made out in accordance with the standard forms. Junior year, all Engineering Courses, third term, five hours.

**51, 52, 53. Steam Engineering.** Senior year, Mechanical Engineering, five hours, through the year.

**51. Steam Engines and Turbines.** In this course the different types of steam engines and turbines are carefully studied, going more

into detail than in Course 50, special attention being given to the moving parts such as valves, valve-gear, etc. Also the various economizing appliances and their effect upon the cost of producing power are taken up. The classroom work is supplemented by frequent tests on engines, by means of which the theoretic calculations are verified. First term.

**52. Boilers.** A careful study of the construction and settings of different types of boilers is made. Different systems of steam heating are considered and the student is required to design and calculate all dimensions for a steam boiler and piping system of proper capacity to heat a given building, locating all radiators, valves, cocks, steam-traps, etc. Attention is also given to feed water heaters, pumps, injectors, and other boiler auxiliaries, as well as to the matter of boiler scale and its preventatives. Second term.

**53. Steam Engine Design.** This course follows very closely Course 51, covering the design of the principal parts of the steam engine, such as the cylinder, piston, shaft, fly-wheel, governor, etc. After the principles of design have been carefully worked out in the classroom each student is required to design and draw the parts for a steam engine of given size. Third term.

**54-56. Shopwork.** In Mechanical Engineering, shopwork is required of students throughout the four years of the course. In Civil, Electrical, and Chemical Engineering, it is required throughout four terms. The Machine Shop is provided with all necessary appliances for teaching the subject in the best manner. Four courses are given, each extending through a year.

**54. Wood-working.** The course in wood-working consists of carpentry, cabinet work, and the principles of wood-turning. Freshman year, Mechanical Engineering, two hours.

**55. Pattern-making and Moulding.** A general course covering pattern-making, simple moulding, and the principles of more complex moulding and machine-shop practice. The patterns are made and moulded and the castings machined by the same students. Parts of actual machines, such as gas engines, speed lathes, and electric motors are made and assembled during the course. Sophomore year, all Engineering Courses, four hours.

**56. Gas and Gasoline Engines.** A careful study is made of the various types of gas and gasoline engines, their theory, history, and design being discussed. Each student is required to design the parts, make the patterns, and actually build a small-sized gas engine, putting it together ready to run. Junior year, Mechanical Engineering, four hours.

**57. Steam Engine.** The work in this course is similar to that in Course 55, except that either a steam engine or an electric generator is built. Senior year, Mechanical Engineering, four hours.

**58. Internal Combustion Engines.** A lecture course supplemented by reading and problems. It starts with the general theory of the internal combustion engine, expanding into a detailed study of the actual machine as manufactured and used. Special attention is given to the different types of engines, methods of introducing the working fluid, and the various systems of ignition, the automobile engine receiving a major portion of the time. Senior year, fall term, four hours.

**59. Heating and Ventilation.** In this course a general study of the various systems of heating buildings is taken up. Attention is given to the comparative merits, under differing circumstances, of the different systems, such as hot air, steam, hot water; direct and indirect heating; ventilation by fan and by natural air currents, special emphasis being given to installing details such as piping systems, location of drips, air valves, etc., together with computation of costs and efficiencies. The lectures are accompanied with problems and experiments. Senior year, winter term, four hours.

**60. Refrigeration.** This course consists of a series of lectures accompanied by illustrative problems bearing upon the various principles and systems of refrigeration. A study is made of the properties and action of ammonia as applied to refrigeration plants. The ice plant is studied in detail and cold storage construction is considered. The subject is taken up from the point of view both of operation and economics. Senior year, Mechanical Engineering, four hours.

### XIII. DEPARTMENT OF CHEMISTRY.

WILLIAM GUNDY OWENS, A.M., PROFESSOR.

GLENN VINTON BROWN, PH.D.,  
PROFESSOR OF CHEMICAL ENGINEERING.

WILLIAM HILLIARD SCHUYLER, CHEM.E.,  
ASSISTANT PROFESSOR IN CHEMISTRY.

ANTHONY ALFONSE SCHWENKLER,  
DAWSON FLOYD BLOOM,  
LLOYD LOY GARNER,  
ASSISTANTS.

The courses in Chemistry are designed to give a comprehensive view of the field covered by chemical investigations and to train the



student in the various methods of chemical research. The courses as a whole are offered to those who expect to teach chemistry or enter the testing or industrial laboratory. As chemistry is at the foundation of the natural sciences, the first courses are essential to the study of science and medicine, and are important for general culture.

**1. Descriptive Chemistry.** Text-books, lectures, and laboratory experiments. The properties, preparation, history, and uses of the non-metallic elements and their compounds. First term.

**2. Descriptive Chemistry.** Text-books, lectures, and laboratory experiments. The properties, preparation, history, and uses of the metallic elements and their compounds. Second term.

**3. Qualitative Analysis.** In the first part of the term chemical reactions are studied in the laboratory, classroom, and text-book, after which fifty compounds, mixtures, and industrial products are determined. Each student reports individually and is questioned on the methods of determination. Twelve hours laboratory work a week required. Third term, prerequisite, Courses 1 and 2.

**4, 5, 6. Quantitative Analysis.** This course, extending through the year, aims to acquaint the student with the methods of analysis used in different chemical determinations:

(1) In the first term Gravimetric and Volumetric analyses are made with pure chemicals to acquire principles and methods.

(2) In the second term, Standardization, ore, alloy, gas, and water are studied.

(3) The third term includes the determination of traces of impurities in "chemically pure" substances and special methods of technical analysis.

**7, 8, 9. Organic Chemistry.** Prerequisites, courses 1, 2, and 3. Five hours a week; laboratory six hours:

(1) First term. The saturated hydrocarbons and their derivatives are studied with special regard to constitution. Pure organic compounds are prepared in the laboratory and their reactions investigated. Ultimate organic analysis begun; Cairus' determinations.

(2) Second term. The unsaturated hydrocarbons of the olefine and acetylene series and their derivatives are studied. Later, carbohydrates, ureids, etc., are taken up. Stereo-chemistry. In the laboratory, more preparations are made and ultimate organic analysis continued with determination of nitrogen, carbon, and hydrogen.

(3) Third term. The aromatic hydrocarbons and their derivatives are studied. Later; polycyclic and heterocyclic compounds;

terpens and camphors are taken up. In the laboratory, preparations of comparative difficulty are made and ultimate organic analysis continued with electro-combustions.

(4) Organic Preparations. Prerequisites, Organic Chemistry. A laboratory course of fifteen hours per week, designed to give technic in organo-synthesis. Written reports with critical discussions of reactions, methods, etc., are required for all preparations.

(5) Organic Preparations. A laboratory course of fifteen hours per week. Written reports required as in IV. Dyes are prepared during the first part of the term, and sugars and related compounds are later taken up.

10, 11, 12. **Physical Chemistry.** Prerequisites, Chemistry 1, 2, 3, 4, 5, and 6; Physics 23, 24, and 25. Calculus.

Five hours per week. Laboratory six hours. Written reports with critical discussions required for all experiments:

(1) First term. Gases and gas law, kinetic theory of gases, solubility, the phase rule, equilibria, etc., are studied. Thermodynamics introduced.

Laboratory determinations of density, viscosity, molecular rotation and refraction, solubility, partition, and vapor pressure are made.

(2) Second term. Thermo-chemistry, solution, osmotic pressure, and balanced actions are first studied. Later, the theoretical part of electro-chemistry is begun. Chemical statics and dynamics continued.

The laboratory work consists of determinations in thermometry, calorimetry; of molecular weights, and velocities of reactions.

(3) Third term. Electro-chemistry. Theoretical electro-chemistry is continued and technical subjects are studied. Conductivity, migration of iron, electromotive force, and polarization are studied in detail. Experiments on these subjects constitute the laboratory work.

13, 14, 15. **Chemical Preparations.** Prerequisites, Courses 1, 2, and 3. Laboratory course; twelve hours per week:

(1) First term. Inorganic substances are prepared and purified. Underlying principles of methods are emphasized in the written reports required for all preparations.

(2) Second term. Preparations of some difficulty are now made. In the second half of the term compounds of the rare earths are prepared and their reactions studied.

(3) **Electro-synthesis.** Third term. Inorganic and Organic compounds are synthesized with the aid of the electric current. Re-



lations of yield to temperature, current density, etc., are taken up in detail by the student in the written reports.

**16. Industrial Chemistry.** A series of lectures and recitations upon the most important technical chemical operations exclusive of metallurgy. A study of the application of chemical principles, technical processes, and the mechanical method of applying these principles. Supplemented by visits to plants in operation. This includes the study of the manufacture of Acids, Alkalies, Glass, Cement, Explosives, Textiles, Paper, the Refining of Oil, etc. Two hours per week, throughout the year. Prerequisites, Courses 1, 2, and 3.

**17. Metallurgy.** The manufacture and properties of iron and steel are studied and the influence of carbon, silicon, phosphorus, sulphur and other elements. Laboratory work consists in determining these elements and studying the structure under the microscope. Glass blowing and manipulation are also taken up. Laboratory work, eight hours a week. Prerequisites, Courses 1, 2, and 3.

**18. Agricultural Chemistry.** The chemistry of plants and fertilizers is studied. Fertilizer and food analysis is practiced in the laboratory six hours a week. This course covers the legal requirements for teachers of Pennsylvania high schools. Prerequisites, Courses 1, 2, and 3.

**19. German Chemical Literature.** One hour a week, throughout the year. Prerequisites, at least two terms of German, and Courses 1, 2, and 3 in chemistry.

Selections from standard German text-books and periodicals are read, and study is made of the derivation and formation of scientific words.

**20. Physical Chemistry.** Mathematical topics.

**21. Organic Research.**

**22. History of Chemistry.**

#### XIV. DEPARTMENT OF BIOLOGY.

NELSON FITHIAN DAVIS, SC.D., PROFESSOR.

NORMAN HAMILTON STEWART, A.B., SC.M.,  
PROFESSOR OF BIOLOGY.

ANNA ROBERTA CAREY, SC.B., A.M.,  
PROFESSOR IN DOMESTIC SCIENCE COURSES.

JAMES WILLIAM LOWRY,  
MARY MARGUERITE DOWNER,  
HAROLD EDWARD MILLER,  
ASSISTANTS IN BIOLOGY.

It is the constant aim in this department to teach how to inter-

pret nature. The student is guided in his investigations by lectures and laboratory manuals.

**1a. Human Physiology.** The aim of this course is to acquaint the student with the elementary facts concerning the functions of the human body. The work consists of lectures and readings from text-books on Physiology. The course is intended for those who wish a general knowledge of Physiology.

**1b. Human Physiology.** General Physiology, Personal Hygiene, Home Nursing and Emergencies, Dietetics and Domestic Sanitation. Three terms, five hours.

**1c. Human Physiology.** Advanced course, third term.

**2. Physiological and Experimental Psychology.** Elective to Seniors and Juniors.

**3. Comparative Psychology.** Text-book, reports. Elective to Seniors and Juniors.

**4. Sanitary Science.** Lectures, one hour a week through the year.

**5. Human Osteology and Comparative Anatomy.** Recitations and dissections. In this course the student makes a systematic study of the human skeleton. The structure of the composite bones is compared to those of other vertebrates.

**6a. Human Anatomy.** Lectures, recitations, and dissections. The student has an opportunity to make a complete dissection of the entire human body. The work is largely independent. Models and text-books are used as guides.

**6b.** A second course, similar to 6a.

**7. Normal Histology (a).** Recitations and lectures, and laboratory work. In this course the student makes a thorough study of the microscopic structure of the cell and elementary tissues, followed by the study of the various organs of mammals. In the laboratory work the students prepare specimens by the various methods in fixing, hardening, straining, and sectioning.

**8. Normal Histology (b).** A continuation of Course 7.

**9. Embryology.** Recitations, lectures, and laboratory work. This course is important because it gives a key to the interpretation of the structure and relationship of the parts of the animal body, and because it investigates the development of the individual. It includes the early development of amphibians, birds, and mammals.

**10. Biology.** Recitations and dissections. The aim of this course is to meet the needs of general education in this subject, and at the same time makes clear the fundamental principles, scope,

method, history, and subdivisions of Biology and its relations to other sciences.

**11. Invertebrate Zoölogy.** Recitations and dissections. This course succeeds the Course in Biology. It takes up the study and dissection of representatives of the invertebrate groups, including their life history, habits, and distribution.

**12. Vertebrate Zoölogy.** Recitations and dissections. This is a continuation of Course 10. It completes a general survey of the animal kingdom, special attention being given by each student to dissections, anatomy, life histories, and habits of the various groups.

**13. Philosophy of Zoölogy.** Lectures and discussions. The evolution of the animal kingdom is traced and much time is given to the relation of evolution to thought. The principal facts and problems of variation and heredity are dealt with.

**14. Entomology.** Recitations and laboratory work. In this course each student makes a thorough study of the dissection, life history, and habits of insects representative of the different orders. Special attention is given to the economical importance and relation of insects to agriculture.

**15. Heredity.** Minor course. The lectures and reports deal with the principal facts and problems of variation and heredity and are supplemented by collateral readings.

**16. Phænogamic Botany.** Recitations, lectures, and field work. This is a general course including the anatomy of the representative types and their relation to the environment; a study is made of the local flora.

**17. Cryptogamic Botany.** Recitations, lectures, and field work. This includes a general introduction to Botany, taking up the study of at least one plant from each of the groups, and working out their life histories. The laboratory work and lectures develop the subject from the evolutionary standpoint.

**18. Advanced Botany.**

**19. Elements of Forestry.** A course covering the factors that control and regulate the development of forests.

**20. Bacteriology.** Recitations, lectures, and laboratory work. The laboratory work includes the practice of the essential bacteriological methods. Much time is given to the study of bacteria found in water and in milk.

**21. Mineralogy and Geology.** Recitations, lectures, and laboratory work. A general course intended to give the leading facts and

principles of Geology and the more important events in the Geological history of the earth. The development of the North American continent is studied in detail.

22. **Economic Geology.** Recitations, lectures, and laboratory work.

23. **Historical Geology.**

24. **German Biological Literature.** Junior year, one hour throughout the year.

### MEDICAL PREPARATORY STUDIES.

The student can select from the medical subjects offered at Bucknell University such as will be required for advanced standing in the Medical College in which he may wish to complete his studies for the degree in medicine, and if his standing in such subject averages not less than nine, he will receive from the Department of Medicine in Bucknell University a Certificate of proficiency in those subjects and in such other subjects related to medical studies as he may have completed at Bucknell. These subjects are open only to students in the College of Liberal Arts, and the Certificate of proficiency is given to students only upon graduation, and in addition to the Diploma of the College of Liberal Arts.

### THE BIOLOGICAL LABORATORY.

The Biological Laboratory is equipped with apparatus for carrying on the work in the Organic Sciences. A large room has been fitted up especially for Microscopic work with equipments for students. Each student has a separate desk containing a microscope and the necessary reagents. The Laboratory is also supplied with collecting and bacteriological apparatus, with books of reference, and other appliances necessary for carrying on Biological research. Those taking Microscopy have the use of microtomes, incubators, reagents, etc. New apparatus is added as occasion demands. The work in Zoölogy is illustrated by marine and freshwater forms, skeletons, and mounted specimens. In comparative Anatomy and Osteology the work is illustrated by skeletons representing different types of vertebrates. Physiology is illustrated with human skeleton, a life-sized French manikin, prepared tissue, and numerous charts. Material for Human Anatomy is received from the State Anatomical Board in Philadelphia, and each student has the opportunity to dissect the whole human body. The student in Histology and Embryology has a good supply of paraffin and collodion blocks. The work is illustrated with microscopic slides, alcoholic material, and French wax models. Each student is provided with dissecting instruments.

## THE MUSEUM.

PROFESSOR NELSON FITHIAN DAVIS, SC.D., CURATOR.

G. NORMAN WILKINSON, SC.B., TAXIDERMIST.

The University possesses good collections of illustrative material in Botany, Zoölogy, Histology, Geology, Mineralogy, and Materia Medica. Parts of these collections are kept in the laboratories and used in classroom work.

Since the erection of the Carnegie Library two large rooms in this building have been set aside as a museum, and the principal collections have been transferred from the Main College to these rooms. A special effort is being made to secure additions to the museum and objects will be thankfully received; especially such as can be used in laboratory work. Among these may be mentioned: marine and fresh-water forms of life; insects; skeletons of vertebrates; birds and mammals; botanical specimens; crystallized minerals and rocks.

A large collection now owned by the University consists of minerals and rocks, fossils, and Indian antiquities. It is especially desired to secure collections to illustrate the geology, minerals, flora, and fauna of Pennsylvania. Recently attention has been given to increasing the collection of Pennsylvania birds, and it is hoped that within a short time the University may possess a good series of mammals also.

## ART COLLECTION.

A room in the Carnegie Library, ninety feet long, has been set aside for the Art Collection. The collection consists of about one thousand specimens of paintings, casts, engravings, and heliotypes, and furnishes valuable aid in illustrating the principles and history of painting and sculpture.

A course of lectures is given yearly to students of the Sophomore class on the History of Art.

## THE LIBRARIES AND READING ROOMS.

PROFESSOR WILLIAM E. MARTIN, A.M., LIBRARIAN.

MARY STONER GRETZINGER, CURATOR.

KATHRYN PFENNIGER SPOTTS AND ESTHER MARIE FLEMING,  
ASSISTANTS.

**The College Library.** The general Library contains over thirty thousand volumes, besides many thousand pamphlets. The reading room is connected with the Library, and offers facilities for reading, studying, and writing. During term time both are open forenoon



and afternoon of each day, Sundays and holidays excepted, and both are maintained without extra charge to students. Students in all departments have free access to the shelves, and may draw two books at one time and retain them for two weeks, with the privilege of one renewal, if desired.

For greater convenience of instructors and students, collections of special technical books are also kept in the Laboratories of the Physical and Organic Sciences, and in the Astronomical Observatory.

The Library is regarded as a working laboratory for all departments of instruction, students being constantly cited to it in classroom work. In this way, while answering the purpose of general culture, it supplements in great measure the monographic treatment of text-book study, and the student is trained under competent guidance to become an investigator. The resulting practical acquaintance with books and bibliography proves a valuable part of liberal education.

By aid of the Card Catalogue and Poole's Index to Periodicals, all the resources of the Library on any given subject are at once available.

The sum of twenty-five thousand dollars has been received as a legacy from William H. Backus, M.D., Class of 1853, the income from which is to be used in the purchase of books.

The Carnegie Building for the accommodation of the Library was erected in 1905, the gift of Hon. Andrew Carnegie, D.C.L.

Gifts to the Library of money and of books will be thankfully acknowledged by the librarian.

### CLASS ORGANIZATION.

Each class is organized with a president and other usual officers. The classes meet for the election of officers on the first Friday of the school year, at three o'clock in the afternoon. The officers then elected serve one year or until their successors qualify. The officers elected on that date by the Freshman class serve until Matriculation day, when permanent officers are elected.

### FRATERNITIES.

No student is permitted to join a fraternity until he has received a certificate from the President of the University, under seal, that he has been a student for one year in the College, that he has completed one year's work and that his conduct has been satisfactory.



## EXHIBITING CLUBS.

Public exhibitions in Music, Oratory, or Athletics are under the control respectively of the Director of the School of Music, of the heads of the departments of Oratory, and of the Comptroller of Athletics. No other exhibitions or concerts are authorized. Alumni and friends should always communicate with the proper authorities before making engagements.

## GENERAL COLLEGE ORDERS.

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### ATTENDANCE.

Only under exceptional circumstances will excuses be granted to leave College during term time. In such cases the examination on the studies gone over by the class, during a student's absence, will be especially searching, and a high degree of attainment will be required. When a student is absent more than one fourth of the term for any reason, he is required to stand private examination in addition to the examination required of the class. One who is absent during the entire term must also necessarily lose his standing in his class. The work of the term begins on the day of opening, and recitations are expected at the first hour appointed for the meeting of the classes. The work continues uninterruptedly, with the exception of holidays marked in the Calendar, until the last day of the term.

### STANDING.

Each instructor records, in numbers ranging from 0 to 10, the character of the recitation of every student reciting to him, and notes also any delinquency in conduct and attendance. The weekly summary of these markings is recorded in permanent books, and constitutes the basis for determining the standing of the student during his connection with the institution. For unexcused absences from recitations one tenth is deducted from the general term average for each absence. *Excused* absences have half the effect in lowering a student's standing as unexcused absences, but a student may, at the option of the professor, do supplementary work to obviate the effect upon his standing of excused absences. At the close of each term an average of these marks is made out, and, if the student's financial obligations to the institution have been met, a report of the scholarship, attendance, and conduct of each student is transmitted to his parent or guardian by the President. No student is advanced from one class to another whose average in any study is less than 7; nor is any student recommended to the Board of Trustees for graduation in the General Courses if his average standing during either his Freshman or Sophomore year is below 8; or if in his Junior year it is below 8.5; or if in his Senior year it is below 9. The passing grade for

graduate students is 9. No one will be recommended for graduation in the Courses of Jurisprudence, Biology, Chemistry, and in Civil, Electrical, or Mechanical Engineering, nor be granted a certificate in the Law or Medical studies, if his average is below 9.

Conditioned students are not recommended to the Board of Trustees for promotion. Students conditioned on entrance must discharge such conditions within the first year thereafter.

If the student has failed in the studies of a term, he will not be permitted to enter upon the studies of a subsequent term until he has passed in the subjects in which he failed, unless a postponement of examination to a definite time is granted by the Faculty.

Appointments in the Graduating Class are made according to the aggregate standing of each member during his entire course. But in assigning these parts the Faculty takes into account the deportment of the student, as well as marks for recitations. The minimum average for an Oration of the First Class is fixed at 9, and for the Oration of the Second Class at 8.

Students who attain an average of 9.4 or more for their entire course are graduated *summa cum laude*; students who attain an average of 9.2 or more graduated *magna cum laude*; those who attain an average of 9 or more are graduated *cum laude*.

### EXAMINATIONS.

The dates of the examination are given in the Calendar. In case a student fails to be present at the examination of his class, for any justifiable reason, his examination will be held at such time as the Faculty may appoint, but in no case is an examination granted a student in advance of the time appointed for the examination of the class.

Unless for very good reasons to the contrary, a student who is granted a special examination will be required to pay a fee of five dollars therefor.

### PUBLIC WORSHIP.

The College duties of each day are opened with religious services at Bucknell Hall.

Attendance upon public worship in some church in town on Sunday morning is required.

### GOVERNMENT.

It is assumed that all who enter the courses of study in the College do so for the purpose of acquiring an education, not only of

the intellect, but also of character. The Laws of the College, enacted by the Board of Trustees, are as few and simple as the proper regulation of a community of young men will permit. These are printed, and a copy is placed in the hands of every student at the beginning of each year. These laws must be observed, not only in their letter, but in their spirit. The atmosphere of the institution is not that of arbitrary restraint, but of reasonable conformity to reasonable laws. The college does not wish to place its stamp or bestow its honors upon any one who is not willing to deport himself as a gentleman. Each student is distinctly placed upon his manhood, and if he abuses his privileges, after reasonable caution, he must withdraw from the institution, at the request of the President.

#### PRESIDENT'S OFFICE HOURS.

The President of the University is in his office in the Main College building, every Tuesday, from 9.30 A. M. to 12 noon, to confer with students who may desire advice or assistance. Students are encouraged to communicate frankly with the President upon any subject in which he may be of help to them.

#### OFFICE HOURS FOR THE COLLEGE WOMEN.

The Dean of the Women's Department will meet in her office College women who may desire advice or assistance from her.

#### VOLUNTARY SOCIETIES.

**The Young Men's Christian Association** is formed of students of the College. It receives religious periodicals and corresponds with kindred societies. A hall has been appropriated to the Society, and has been suitably furnished for religious meetings.

**The Young Women's Christian Association**, a voluntary society open to the officers and students of the College and Institute, meets weekly. The regular Tuesday evening prayer meeting, missionary, and temperance work, special Bible Classes and College Settlement work are in charge of this Association.

**The Students' Publication Association** is an organization which has in charge the issuing of the *Bucknellian*. This periodical appears weekly during the collegiate year. The same Association publishes the *Commencement News* daily during Commencement week.

**The Athletic Association** of the College has been formed to encourage and regulate athletic sports. Considerable liberty is allowed the Association in carrying out its purpose. The Association is not allowed, however, to arrange match games with other similar

bodies without having secured the consent of the Faculty. Subject to the control of the Faculty, the general management of athletics is managed by an Executive Board, consisting of three members elected by the Faculty, two by the Alumni Association, and two by the Athletic Association of students.

No student who is deficient in rhetorical or classroom work in any term shall be eligible to the office of manager or director in any student organization, or to be a member of any exhibiting organization, or of any contesting athletic team, or of any publishing or editing board during any subsequent term until such deficiency is made up.

### HEALTH AND PHYSICAL CULTURE.

The Tustin Gymnasium has been provided for the physical training and development of young men. This is now provided with the apparatus usually found in well-furnished gymnasiums. The Directors of the Gymnasium examine every student, taking and recording in a book his physical measurements, and prescribe such exercise as may be required for his physical development. Regular exercise in the Gymnasium is required of students during the winter term.

### PHYSICAL CULTURE—WOMEN'S COLLEGE.

The health of the students is made a prime object of attention, and sanitary requirements are carefully observed. The Calisthenium of the Women's College is furnished with Indian clubs, dumb bells, wands, rings, hoops, guns, wall pulleys, parallel bars, etc., and classes in Physical Culture are organized for the benefit of all students. The exercises practiced are such as tend to develop grace and strength. The Campus of six acres furnishes facilities for exercises. Lawn Tennis and other outdoor games are encouraged and exercise in the open air is required.

Two hours a week in the Calisthenium during the winter term is required for all resident students, Juniors and Seniors of college excepted. No student will be excused from the required exercise except by order of the Director of Gymnastics. Special exercises are prescribed for students needing individual corrective work.

Every student while exercising in the Calisthenium must wear a gymnasium suit of the pattern prescribed by the Director.

Swedish gymnastics, æsthetic gymnastics, light apparatus drill, playground work and games are taught. Lectures on health and hygiene are given throughout the year.



## AIDS AND HONORS.

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### PRIZES.

The prizes are awarded to the persons who in the judgment of the several committees attain the highest degree of excellence among the respective competitors, but no prize is bestowed unless a high degree of merit has been attained by the person receiving it.

#### THE PRIZE OF THE CLASS OF '71.

This prize, established by the Class of 1871, is awarded to the student of the Freshman Class who shall prove himself best prepared for College in the two branches, Latin and Mathematics.

The prize for 1918 was awarded to Marguerite Lotte.

#### THE FRESHMAN DECLAMATION PRIZE.

A prize is awarded to the member of the Freshman Class who shall excel in declamation at the Annual Contest of the Freshman Class.

The prize for 1918 was awarded to George Hobart Brown.

#### THE SOPHOMORE DECLAMATION PRIZE.

A prize is awarded to the member of the Sophomore Class who shall excel in declamation at the Annual Contest of the Sophomore Class.

The prize for 1918 was awarded to Evan Ingram.

#### DECLAMATION PRIZES FOR WOMEN.

Prizes for the best declamation are open for competition to the Sophomore and Freshman Classes. The prize for the Freshman Class was awarded, in 1918, to Anna Fairchild.

The prize for the Sophomore Class was awarded, in 1918, to Cecelia Abihail Linch.

#### THE REGISTRAR'S PRIZE.

The Registrar of the University offers a prize to that member of the Junior Class who shall pronounce the best oration at the Junior Exhibition in Oratory.



The Junior oratorical prize was awarded in 1918 to Alden Eugene Davis.

The corresponding prize for women was awarded in 1918 to Florence Adelaide Cleary.

#### **THE JUNIOR DEBATE PRIZE.**

No Junior debate was held in 1918.

#### **THE HERBERT TUSTIN PRIZE.**

In memory of his deceased son, the late Professor Francis Wayland Tustin, Ph.D., of the Class of 1856, paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the HERBERT TUSTIN PRIZE FUND, the interest of which is to be forever paid annually as two prizes, in the proportion of fifteen dollars for the First Prize, and of ten dollars for the Second Prize, to the two students of the Senior Class who shall have attained the highest and the second highest standing in Psychology and Ethics (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception."

The first prize was awarded in 1918 to Charles Carroll Ward, and the second to Margaret Geissenhainer Mattern.

#### **THE HERBERT GOODMAN BARROWS PRIZE.**

In memory of his son, the Reverend William Barrows, A.M., of the Class of 1867, paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the HERBERT GOODMAN BARROWS PRIZE FUND, the interest of which is to be forever paid annually as two prizes of equal amounts to the student or two students of the Senior Class who shall have attained the highest standing, respectively, in the Latin and in the Greek language and literature (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception."

The prize for excellence in Latin was awarded in 1918 to William Thomas Johnson. The prize for excellence in Greek was awarded in 1918 to David Nathaniel Boswell.

#### **THE CHAPLAIN J. J. KANE PRIZE.**

The Reverend James J. Kane, A.M., Chaplain in the United States Navy, and a graduate from the Theological Department of

this University, of the Class of 1867, has established a prize which is to be given annually to that member of the graduating class who delivers the best oration on Commencement Day.

The prize was awarded in 1918 to Dorothy Betty Kanter.

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### THE BUCKNELL PRIZES FOR WOMEN.

The following prizes for women were founded by William Bucknell, of Philadelphia:

1. A Senior Prize to be awarded to the member of the graduating class of the College, who shall attain the highest grade in the studies of the four years' College Course.

Awarded in 1918 to Emma Kathryn Levegood.

2. A Senior Prize, to be awarded to the member of the graduating class who, being excellent in scholarship during the Senior Year, shall prepare the best essay.

Awarded in 1918 to Mary DeWees.

3. A Junior Prize, to be awarded to the member of the Junior Class, who, being excellent in scholarship during the Junior Year, shall prepare the best essay.

The prize in 1918 was awarded to Alice Carey Ferris.

4. A Sophomore Prize, to be awarded to the member of the Sophomore Class who, being excellent in scholarship during the year, shall prepare the best Sophomore essay.

Awarded in 1918 to Lucelia Beryl Childs.

5. A Freshman Prize, to be awarded to the member of the Freshman Class who, being excellent in scholarship during the year, shall prepare the best Freshman essay.

Awarded in 1918 to Eva Gertrude Thayer.

The fund consists of \$2,000, the income from which is to be devoted to these prizes annually in a manner more particularly defined in the donor's communication to the Trustees.

Themes for the Bucknell Essay Prizes will be drawn from works which will be announced by the Professor of Rhetoric each year.

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### SCHOLARSHIPS.

#### I. BUCKNELL SCHOLARSHIPS.

The William Bucknell Scholarships, twenty in number and of \$1,000 each, were established for the purpose of aiding worthy young men in securing an education which will increase their usefulness in life. The income from this fund is to be paid annually to twenty

young men, in accordance with the rules which will be made known upon application to the Committee of Examination, consisting of the President of the University, H. S. Hopper, Esq., and Professor Rockwood.

## **II. SCHOLARSHIPS FOR MINISTERS' CHILDREN**

Scholarships upon the general foundation have been established for the children of ministers of the Gospel, of all denominations, in active service.

## **III. THE LIVINGSTON SCHOLARSHIPS**

Established from a legacy of M. B. Livingston, twenty-two in number, are available for students for the ministry.

## **IV. THE LONGAN SCHOLARSHIP**

The Longan Scholarship, established from a legacy of O. W. Longan, Esq., is available for a student for the ministry from Lycoming County, Pennsylvania.

## **V. THE LEWIS E. JONES SCHOLARSHIP**

Established from a legacy of the late Lewis E. Jones, and is available for students of Welsh descent to the amount of the income from five hundred dollars.

## **VI. THE JOHN HOWARD HARE SCHOLARSHIP**

Established by the Reverend Calvin Aurand Hare, A.M., in memory of his son, John Howard Hare, available for a student for the ministry upon recommendation of the Pennsylvania Baptist Education Society and the President of the University.

## **VII. THE VELOLA E. HALL SCHOLARSHIP**

Established by the Reverend Henry Chandler Hall, A.M., Class of 1882, in memory of his daughter, Velola E. Hall, A.B., Class of 1904, available for a student in the Women's College.

## **VIII. THE WILLIAM V. WILSON SCHOLARSHIPS**

Were established in memory of the Reverend William V. Wilson, D.D., of New Jersey.

## **IX. THE PHILADELPHIA ALUMNÆ SCHOLARSHIP**

This scholarship, founded by the Philadelphia Alumnæ Club, is available for a woman student from Philadelphia.

### **X. THE WEAVER SCHOLARSHIPS**

Established with a fund of \$10,000, the gift of Colonel Joseph Kerr Weaver, A.M., M.D., Class of 1861, Trustee since 1891, and available for three worthy students. Named by action of the Board in honor of Doctor and Mrs. Joseph K. Weaver.

### **XI. THE GENERAL MILLER SCHOLARSHIPS**

Ten scholarships have been established by Major-General Charles Miller, A.M., to be awarded to worthy students.

### **XII. THE ESTHER OWENS SCHOLARSHIPS**

Have been founded by a gift from Miss Esther Owens.

### **XIII. ANNUAL SCHOLARSHIPS**

A number of persons have established annual scholarships for the aid of young men or women attending college. Information concerning annual scholarships can be obtained from the President of the University.

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### **LOAN SOCIETY FOR WOMEN.**

In June, 1887, there was organized an association for the purpose of assisting young women of limited means to obtain an education. A fund was established by gifts from the Alumnae and friends. The money is loaned to beneficiaries, who obligate themselves to return it *without interest*, as soon after their graduation as they may be able. This fund is controlled by an Executive Board, who hold their annual meeting the second Tuesday in January.

During the last twenty-eight years eighty-six young ladies received aid. More than one half of these have returned the loan in full.

The annual meeting for the election of Officers is held in January.

The payment of one hundred dollars constitutes the donor a Life Member of the Association.

Applications for loans should be made at or before the semi-annual meeting of the Board the second Tuesday in October.

Contributions should be sent to the Treasurer, Mrs. John T. Judd, Lewisburg, Pa. Any information will be given by the President, Mrs. Katherine B. Larison, Lewisburg, Pa., or Mrs. Llewellyn Phillips, Corresponding Secretary, Lewisburg, Pa.

## FOURTH STUDY.

In order to promote special scholarships in the several departments of study, the following provision has been made:

1. Any student who has obtained an average of 9 in the studies of the previous term may take a fourth study in the College.

2. If the student shall attain an aggregate average of 9 in all the studies of the current term, and pass a satisfactory examination on the fourth study, it shall be credited to him.

## EXPENSES.

The College charges amount to \$160 per annum, for those who room in the College buildings, and \$150 for those who room in the town. The College charges include library fee, gymnasium fee, and other incidental fees common to all students, as well as Tuition. Scholarships are rated at \$50 per annum, and that amount is deducted from College charges. Students in the Course in Civil, Electrical, or Mechanical Engineering are charged \$5 per term extra. Students in the other Courses who take an engineering subject are charged at same rates as students in engineering. This charge is for the regular work; when a fourth study is taken, an extra charge of \$15 is made. Graduation fee and diploma, \$10. Masters' Degree and Diploma, \$10.

The Study Rooms in the Main College are so arranged that two students occupy the same study. The Dormitories are intended to accommodate only one person, so that each student has his own private sleeping room. These are furnished with spring bedsteads. The student must supply himself with all other furniture. Students are responsible for damages to their rooms, whether it be done when they are present in the room or absent from it.

If a student occupy a study by himself, the charges for room-rent and private fuel will be doubled.

An extra charge is made for electric lighting of private rooms, according to the number of lights used.

An extra charge ranging from \$5 to \$10 per term is also charged for rooms in the East and in the West College.

An additional charge is made for rooms cared for by the Institution.

Young men in the Collegiate Department, who so desire, can have furnished rooms in the West College, with board.

Young women in the Collegiate Department room and board in the Women's College.



## EXPENSES OF STUDENTS IN WOMEN'S COLLEGE.

**I. Boarding Students.** The regular charge for Boarding Students in College Courses and Domestic Science Course, is \$375.00 per annum; the other expenses, spending money, books, and clothing, will vary with the individual student.

An additional charge will be made when one student occupies a double room alone in the Main Building. Extra charge will also be made for front corner rooms in the West Wing.

This charge does not include the personal laundry of the student.

For the rooms in the Bucknell Cottage and in the New Cottage there is an extra charge, depending on the location.

The assignment of rooms is for one year, and is made the first Monday morning in June, immediately after the devotional exercises in Bucknell Hall.

Students from a distance will save inconvenience by applying for a room before the term opens. A deposit of ten dollars is required when a room is chosen. This amount is credited upon the regular term bills. Should a student for good reason be unable to return, the deposit will be refunded, provided notice is sent to the Registrar not less than four weeks before the opening of the term for which the room is engaged.

Students will be charged for damage done to furniture or to the room they occupy.

**II. Day Students.** The charges for Day Students in College Courses and in Domestic Science Course is \$150.00 per annum.

**III. Extra Studies.** The charges for Elocution, Drawing, and Painting, and Music, will be found under those titles.

All bills must be paid within the first ten days of each term.

Checks and drafts should be drawn in favor of the Registrar of the University.

No bill will be made out for a shorter period than one term; and no deductions will be made, except in the charge of board, in case of a prolonged absence on account of sickness.

The expenses for Music, Printing, and other charges ordinarily incurred at Examination and on anniversary occasions, are paid by the class or classes which incur the expenses.

The fee for Graduation and Diploma is \$10.00.

Free scholarships, rated at \$50.00 per annum, are awarded to children of Ministers of the Gospel *in actual service*.

In the Laboratories students pay for chemicals used and for apparatus broken or damaged. In the chemical laboratory \$10 per term is charged for gas, water, and general chemicals for each course,



except Courses 1 and 2, for which he charge is \$3. A deposit of \$10 per course is required to cover breakage and cost of extra chemicals.

A small fee is charged also in each of the elective courses in the departments of Mechanics and of Organic Science and in Surveying and Engineering, for the use of instruments and for material used.

Before entering upon the experimental courses students must deposit with the Registrar security for materials used.

These charges must be paid in advance at the beginning of each term.

No student is entitled to his place in his class until he has made settlement with the Registrar.

Men students can board in clubs at a cost of from \$2.50 to \$3 per week. Boarding can be obtained in private families at \$4 or \$5 per week. No self-boarding is allowed in the College buildings.

## SUMMER SESSION.

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NELSON FITHIAN DAVIS, SC.B.,

DEAN OF THE SUMMER SCHOOL.

The summer courses offered at Bucknell University for 1919 will begin Monday, July 7, and continue for six weeks. No sessions will be held on Saturdays.

The summer courses are primarily designed for the following classes of students:

1. Teachers in the public schools who desire advanced instruction and opportunities for research with or without regard to a degree or professional advancement.
2. Students who desire to secure additional residence courses in university work.

### CREDIT FOR SUMMER COURSES.

All courses will be given hour for hour credit as satisfying the requirements for a degree. All courses offered are of college grade.

### ADMISSION REQUIREMENTS.

No examinations are required for admission to the summer courses. Courses are open to men and women who are qualified to pursue them to advantage, but persons who desire credit toward a degree must satisfy the entrance requirements of Bucknell University before the work may be so credited. A permanent record will be kept of all work satisfactorily completed in the summer session.

### BOARD AND LODGING.

Board and lodging may be obtained near the college at reasonable rates. Classes will be so arranged that students living in all nearby towns can attend and live at home. Arrangements will be made whereby furnished rooms in the college buildings can be had provided there is demand.

## REGISTRATION.

All persons who intend to take summer courses are requested to send their application to Benjamin F. Thomas, the Registrar of the University, if possible, before June 1, 1919.

## FEES.

The tuition for three courses, \$25. Double time courses are counted the same as two single courses.

One course, \$10; two courses, \$20; four courses, \$31.25. Students will not be allowed to take more than four courses. All bills must be paid by July 11. No credit will be extended after that date. Information regarding laboratory fees is included in the detailed announcements of the courses in science.

The College makes no reduction for late entrance or for withdrawal before the close of the session; except that a proportional part of the fee is returned to a student who is compelled, through illness or other serious cause, to discontinue his course before the middle of the session.

## LIBRARY AND MUSEUMS.

The Carnegie Library and the Museums of the University will be open for the use of the summer students without charge.

## DESCRIPTION OF COURSES.

For detailed description of the Courses offered, reference is made to the Special Bulletin, copies of which may be obtained by applying to the Registrar, Benjamin F. Thomas.

The Courses will include School Administration, History of Education, Child Psychology, Methods of Teaching English, Teachers' Biology, History (Economic and Political) of the United States; Courses in the Latin, French, and Spanish Languages; in English Literature; in Rhetoric and Oratory; in Algebra and Trigonometry; in Chemistry and in Biology.

BENJAMIN F. THOMAS, REGISTRAR,  
Lewisburg, Pa.

## SIXTY-EIGHTH ANNUAL COMMENCEMENT.

TUESDAY, JUNE 4, 1918.

## HONORS AT GRADUATION.

*ORATIONS SUMMA CUM LAUDE.*

FRANK ALLEN BERKENSTOCK,	WILLIAM THOMAS JOHNSON,
CLIFFORD COATES DECK,	DOROTHY BETTY KANTER,
ROBERT SAXTON DOWNING,	EMMA KATHERINE LEVEGOOD,
HENRY LAWRENCE FONDA,	LEON HENRY NOLL,
CHARLES CARROLL WARD.	

*ORATIONS MAGNA CUM LAUDE.*

RALPH BERNHEISEL BEARD,	JOSEPH STANFORD LEPLEY,
HIRAM JOHN BLOOM,	MARGARET GEISSENHAINER MATTERN,
ETHEL RUTH FARLEY,	JESSIE IRENE POTTS,
MABEL HAIN FRITZ,	ALLEN SNADER REDDIG,
STANLEY NEWTON HARRIS,	CHESTER FRANKLIN SCHROYER,
CHARLES ANDREW KISSELL,	HELEN LORAIN SHAFER,
SAMUEL DAVID LENOX,	SAMUEL JACOB SMITH,
MARY SPEECE.	

*ORATIONS CUM LAUDE.*

ALVIN JACOB ADAMS,	HAZEL MARIE GAY,
HULDA HOUSTON ARTHUR,	JOHN STEINER GOLD,
WILLIAM PALMER BACHMAN,	ELIZABETH LOUISE HAHN,
RUSSELL ALBERT BOSTIAN,	KARL KELCHNER HULLEY,
MARY NINA BOSWELL,	NERISSA DAGMAR JAMES,
RUSSELL ELIAS BOYER,	JOHN MCKEE JONES,
ELIZABETH BIRD CHAMPION,	CHESTER SCOTT KEEPER,
CHARLES WALTER DEAN,	DAGMAR ELLEN LETH,
MARY DEWEES,	CARLISLE WEAVER MASON,

EVELYN MCGANN,  
 GEORGE HOBART MILES,  
 MIRIAM AVIS MINCH,  
 MALCOLM EUGENE MUSSER,  
 MARGARET BAINBRIDGE PHILLIPS,  
 EVELYN EDWINA PUGH,  
 BRUCE OLIVER RANCK,  
 EARL PRESTON RAUB,

ELEANOR LOUISE ROBERTSON,  
 MERWYN SCOTT,  
 LOUIS WALTON SIPLEY,  
 ORA BEATRICE SMITH,  
 SAMUEL DALE SPOTTS,  
 ELIZABETH WARD STEPHENS,  
 WILLIAM EDMUNDSON TRIMBLE,  
 MARTHA EVELYN WETTLAUFR.

## DEGREES CONFERRED *PRO MERITO*.

TUESDAY, JUNE 4, 1918.

### A. DEGREE IN ARTS.

#### I. MASTER OF ARTS.

EDWARD OLIVER CLARK,  
 HENRY LAWRENCE FONDA,  
 CHARLES MOSS GRIMMINGER,

FREDERICK BENTLEY IGLER,  
 HAROLD STANLEY MYATT,  
 REUBEN WELTY SHRUM.

#### II. BACHELOR OF ARTS.

ALVIN JACOB ADAMS,  
 HULDA HOUSTON ARTHUR,  
 JOHN EDGAR BENNETT,  
 HIRAM JOHN BLOOM,  
 DAVID NATHANIEL BOSWELL,  
 MARY NINA BOSWELL,  
 MARGARET COATES,  
 MARY DEWEES,  
 ROBERT SAXTON DOWNING,  
 MABEL HAIN FRITZ,  
 EDITH GABEL,  
 HAZEL MARIE GAY,  
 ELIZABETH LOUISE HAHN,  
 EMERSON ROY HASSRICK,  
 ETHEL REBECCA HEWITT,  
 KARL KELCHNER HULLEY,

WILLIAM THOMAS JOHNSON,  
 ELLA CORINNE JONES,  
 JOHN MCKEE JONES,  
 DOROTHY BETTY KANTER,  
 SAMUEL DAVID LENOX,  
 KATHERINE MARIE LERMANN,  
 MARGARET GEISSENHAINER MATTERN,  
 MARGUERITE MAY,  
 DOROTHY INEZ MCCLINTIC,  
 FLORINE MICHAEL,  
 MIRIAM AVIS MINCH,  
 JESSIE IRENE POTTS,  
 CHESTER FRANKLIN SCHROYER,  
 HELEN LORAIN SHAFER,  
 FRAZIER HERBERT SHEFFER,  
 ORA BEATRICE SMITH,

MIRIAM GRAYCE WEAVER.

#### III. BACHELOR OF PHILOSOPHY.

STANLEY NEWTON HARRIS,

AILEEN MARIE LARSON,

SAMUEL JACOB SMITH.

## B. DEGREES IN SCIENCE.

## I. THE SECOND DEGREE IN GENERAL SCIENCE.

COLEMAN JOHN HARRIS,                      ALBERT NORMAN REDELIN,  
ARTHUR DAVID WALTZ.

## II. THE FIRST DEGREE IN GENERAL SCIENCE.

RALPH BERNHEISEL BEARD,	DOROTHEA FRANCES MEEK,
MARY BARRICK BEATTY,	GEORGE HOBART MILES,
RUSSELL ALBERT BOSTIAN,	ROBERT STORK MOORE,
WALTER JACOB BOWER,	MALCOLM EUGENE MUSSER,
ELIZABETH BIRD CHAMPION,	HENRY SHERMAN NORTHROP,
ETHEL RUTH FARLEY,	MARGARET BAINBRIDGE PHILLIPS,
HENRY LAWRENCE FONDA,	EVELYN EDWINA PUGH,
JOHN STEINER GOLD,	ALLAN SNADER REDDIG,
NERISSA DAGMAR JAMES,	ELEANOR LOUISE ROBERTSON,
CHARLES ANDREW KISSELL,	FLORENCE PAULINE SHALTER,
DAGMAR ELLEN LETH,	ELIZABETH WARD STEPHENS,
EMMA KATHERINE LEVEGOOD,	MARTHA EVELYN WETTLAUER,
MARSH CHARLES LEWISSON,	FRANK ALLEN BERKENSTOCK,
EVELYN MCGANN,	CHARLES CARROLL WARD.

## III. THE FIRST DEGREE IN BIOLOGICAL SCIENCE.

CHESTER SCOTT KEEFER,                      MARY SPEECE,  
JOSEPH STANFORD LEPLEY,                  SAMUEL DALE SPOTTS.

## IV. THE FIRST DEGREE IN CHEMICAL ENGINEERING.

ALFRED RAPHAEL DELAND,	BRUCE OLIVER RANCK,
GROVER CLEVELAND FORESMAN,	EARL PRESTON RAUB,
HERBERT CARL GRICE,	FRED NEIWEG WILLIAMSON,
MERWYN SCOTT.	

## V. THE FIRST DEGREE IN CIVIL ENGINEERING.

WILLIAM PALMER BACHMAN,	ADRIAN JAMES DOLPHIN,
RUSSELL ELIAS BOYER,	STANLEY NEWTON HARRIS,
HOWARD LANDIS ROSENBERGER.	

## VI. THE FIRST DEGREE IN ELECTRICAL ENGINEERING.

HAZARD CLINTON CHASE,	CARLISLE WEAVER MASON,
CHARLES WALTER DEAN,	BOYD LAWRENCE NEWCOMB,
CLIFFORD COATES DECK,	LEON HENRY NOLL,
WILLIAM EDMUNDSON TRIMBLE.	



## VII. THE FIRST DEGREE IN MECHANICAL ENGINEERING.

FRED BARNHART BAUMAN,

LOUIS WALTON SIPLEY.

DEGREES CONFERRED *HONORIS CAUSA*.

## DOCTOR OF DIVINITY.

ALVIN ALONZO COBER,

JOHN GRANT LAUDERBAUGH,

ELWOOD HERBERT DUTTON,

GEORGE EDWARD NICHOLS.

## DOCTOR OF CIVIL LAWS.

FRANK ERNEST ROCKWOOD.

## CERTIFICATES IN DOMESTIC SCIENCE.

ANNE ELY BERTOLET,

BLANCHE MARGARET KENNELLY,

LUCELIA BERYL CHILDS,

MARY HELEN MATTHEWS,

ELIZABETH RUTH DOWNS,

HELEN NUTT,

MARY KATHERINE GLOVER,

KATHERINE FLORENCE PUDDICOMBE,

IRMA LENORE HESS,

MABEL ELIZABETH RUCKMAN,

MABEL ERMA JONES,

MARGARET THOMAS SMITH.

RUTH ALIDA KELLOGG,

CARRIE AMANDA WETZEL,

## DIPLOMAS IN MUSIC.

MARY ROTHINA ARBOGAST,

FLORINE MICHAEL,

FLORENCE MAY BUFFINGTON,

EMMA MARY MOYER,

FLORENCE EDNA CRABB,

EMILY GROFF PIATT,

HAZEL LILLIAN HAGERMAN,

KATHERINE PAULINE REED,

HELEN WITHERSPOON HAMOR,

RACHEL MARY REED,

BEULAH MAE HUMMEL,

ETHEL RUTH REMALY,

MARIE AILEEN LARSON,

HELEN SHEPHARD RUGGLES,

LEAH ELIZABETH LINDIG,

HAZEL MAE SMITH,

EMILY LEVIS MACKEY,

ELLEN MAE SMITH,

ROSE MAHER,

EMMA ALICE STRINE,

OLIVE MARGARET THOMPSON.

## COMMENCEMENT ADDRESSES.

JUNE, 1918.

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Baccalaureate Sermon.....THE PRESIDENT  
 Address before the Alumni Association.....REV. E. H. DUTTON, A.M.  
 Commencement Address.....PRESIDENT MILTON G. EVANS, LL.D.

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*Secretary*, LOUIS W. ROBEY, A.M., ESQ., Philadelphia.

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*Secretary*, ANDREW GREGG LOOMIS, A.B., LL.D., New York City.

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*Secretary*, FREDERICK R. ZUG, SC.B., Carnegie.

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*Secretary*, GERTRUDE W. ROOS, sc.B., Williamsport.

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*Secretary*, LEO L. ROCKWELL, A.M., Lewisburg.

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*Secretary*, ROY J. FARR, A.B., Los Angeles.

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*Secretary*, OLIVE CROZER RICHARDS, A.B.

**Lewisburg Alumnae Club.**

*President*, KATE McLAUGHLIN BOURNE, A.M., Lewisburg.

*Secretary*, FANNIE MAE GETZ, Lewisburg.

Number of Alumni, 2182.

Oldest Living Graduate,

REV. JOHN MORRIS LYONS, CLASS of 1851.

## NAMES OF STUDENTS.

---

### GRADUATE STUDENTS.

NAME.	MAJOR SUBJECT	RESIDENCE.
HELEN KING BARTOL, A.B.,		Lewisburg
	<i>French.</i>	
JOHN RANCK BELL, PH.B.,		Lewisburg
	<i>Philosophy.</i>	
DANIEL FLOYD K. BERTOLETTE, A.B.,		Shamrock
	<i>Literature.</i>	
JOHN BENJAMIN BOYER, SC.B.,		Milroy
	<i>Science.</i>	
MABEL MAY BROWN, A.B.,		Clearfield
	<i>English.</i>	
WILLIAM ADAM CAWLEY, SC.B.,		Lewisburg
	<i>Biology.</i>	
RAYMOND E. CROSS, SC.B.,		Middletown, N. Y.
	<i>Economics.</i>	
JOSEPH LESLIE CROWELL, A.B.,		Barneгат, N. J.
	<i>Philosophy.</i>	
RALPH FREDERICK DAVENPORT, PH.B.,		Carlisle
	<i>Pedagogy.</i>	
ISAAC NEWTON EARLE, JR., A.B.,		Lewisburg
	<i>Greek.</i>	
FAYETTE CLINTON ESHELMAN, SC.B.,		Franklin
	<i>Biology.</i>	
WILLIAM HAYES GATEHOUSE, A.B.,		Cumberland, Md.
	<i>History.</i>	
WALTER SCOTT GEARHART, SC.B.,		Manhattan, Kansas
	<i>Civil Engineering.</i>	
MARWOOD BENJAMIN GLOVER, SC.B.,		Collingdale
	<i>Jurisprudence.</i>	
EUNICE VIRGINIA HALL, PH.B.,		Scranton
	<i>Education.</i>	
NERISSA DAGMAR JAMES, SC.B.,		New York City
	<i>Biology.</i>	

NAME.	MAJOR SUBJECT	RESIDENCE.
FRANK MURRAY JENNER, PH.B.,	<i>Mathematics.</i>	Newark, N. J.
HARRY XING KELLY, A.B.,	<i>Philology.</i>	Philadelphia
MARY ANNA KUNKEL, A.B.,	<i>Literature.</i>	Lewisburg
CHARLES WALTER LOTTE, A.B.,	<i>French.</i>	Paterson, N. J.
MINNIE ETHEL MAYNARD, A.B.,	<i>Pedagogy.</i>	Williamsport
GILBERT JUDSON MEREDITH, SC.B.,	<i>Science.</i>	Woodbridge, N. J.
OLIVE EWING MOORE, A.B.,	<i>History.</i>	Bridgeton, N. J.
NORMAN GOULD OLIVER, A.B.,	<i>Philosophy.</i>	Evansville, Wis.
RUDOLPH PETERSON, SC.B.,	<i>Education.</i>	Cresson
GEORGE WILSON POTTS, A.B.,	<i>Science.</i>	Pittsburgh
JESSE EARLE RILEY, A.B.,	<i>Economics.</i>	Philippi, W. Va.
DAVIS CLIFFORD RUTH, A.B.,	<i>Latin.</i>	Philadelphia
CHARLES LOY SANDERS, A.B.,	<i>English.</i>	Johnstown
PAUL JASPER SANDERS, A.B.,	<i>Science.</i>	Summit, N. J.
M. ELLSWORTH SAYRE, A.B.,	<i>Biology.</i>	Philadelphia
ROBERT ROWE SELLERS, SC.B.,	<i>Civil Engineering.</i>	Gainesville, Fla.
JOSEPH PARDOE SHEARER, SC.B.,	<i>Biology.</i>	Baltimore, Md.
MARY SPEECE, SC.B.,	<i>Biology.</i>	Pittston
GEORGE SALVADORE STEVENSON, SC.B.,	<i>Biology.</i>	Baltimore, Md.
CHESTER JOSEPH TERRILL, A.B.,	<i>Economics.</i>	Albany, N. Y.
MARTHA JANE THOMAS, PH.B.,	<i>German.</i>	Frostburg, Md.

NAME.	MAJOR SUBJECT	RESIDENCE.
JESSE ROY TYSON, SC.B.,	<i>Civil Engineering.</i>	Norristown
HARRY BRUNGAERT WEAVER, PH.B.,	<i>History.</i>	Meyersdale
PAUL RAYMOND WENDT, SC.B.,	<i>Economics.</i>	Philadelphia
EARL BAXTER WEST, SC.B.,	<i>Biology.</i>	Wilmington, Del.
SAMUEL G. WILLIAMS, SC.B.,	<i>Economics.</i>	Elkins Park

Non-resident Graduate Students, 42.



## THE SENIOR CLASS.

CLASS OF 1919.

NAME.	RESIDENCE.
SAMUEL ABRAMS,	Milton
MARGARET ELIZABETH ALLEN,	Allenwood
CHARLES JOSEPH ANCHOR,	Philadelphia
HARRY HERMAN ANGEL,	Williamsport
DEWITT KIEFFER BOTTS,	Milton
MARY EVELYN BRIGHT,	Philadelphia
MARGARET JANE BUCK,	Weldon
AGNES CARSWELL,	Williamsport
ROBERT GONZALES CARULLA,	Santiago, Cuba
GOLDA CLARK,	Jersey Shore
FLORENCE ADELAIDE CLEARY,	Dunmore
RAYMOND JOHN CORNISH,	Carbondale
ERNEST JUDSON CRUSE,	Picture Rocks
EMERSON COLLINS CUPP,	Milton
ALDEN EUGENE DAVIS,	Dickson City
MARY MARGUERITE DOWNER,	Glassboro, N. J.
RUTH EVELYN FARQUHAR,	West Brownsville
ALICE CAREY FERRIS,	Philadelphia
MARGARET MARY FINERTY,	Dunmore
JEAN OLGA FLANAGAN,	Pittsburg
IRENE JEMIMA FRITZ,	Trevorton
DAVID CHRISTIAN GALL,	Philadelphia
LLOYD LOY GARNER,	Harrisburg
WEBER LATCHA GERHART,	Lewisburg
HAROLD DICKINSON GERMER,	Harrisburg
AGNES MCDOWELL GILMOUR,	Paterson, N. J.
IRENE ELSIE GOSSWEILER,	Allentown
MARY EDNA GROVE,	West Milton
SUSANNAH DUNKLE GROVE,	West Milton
META FRANCES HALDEMAN,	Ivyland
VORIS BLAINE HALL,	Montgomery
HOWARD LAVERNE HARER,	Williamsport
MADONNA HARRIS,	Laceyville
PAUL ELMER HARTMAN,	Oley
JAMES RUSSELL HERMAN,	Edwardsville
HELEN ROBERTA HOFFA,	Lewisburg
CLIFFORD AMBROSE HOLLERAN,	Watertown, Conn.
WILLIAM FREDERICK HOLSING,	Canonsburg

NAME.	RESIDENCE.
ELINOR MARION HYATT,	Philadelphia
GEORGE FREDERICK JAMMER,	Trenton, N. J.
EVERETT THOMAS JONES,	Scranton
FRANKLIN DE LAVERNE JONES,	Nanticoke
RAYMOND DEWITT KLINE,	Winfield
MARJORIE REBECCA KOSTENBADER,	Lewisburg
CHARLES BUNNELL KREITNER,	Honesdale
GEORGE MERRILL KUNKLE,	Lewisburg
NAOMI B. LANE,	Brockwayville
DOROTHY BEAUMONT LAWRENCE,	Butler, N. J.
FRANK AMES LAWRENCE,	Steelton
CHESTER ROBERT LEABER,	Williamsport
RAYMOND PLANK LEWIS,	Lewisburg
JAMES WILLIAM LOWRY,	Uniondale
BENJAMIN MARKOWITZ,	Pottstown
CHARLES WILLIAM MITCHELL,	Reedsville
RUTH ADELIA MINNIG,	West Hazleton
MARGARET SALOME McLAUGHLIN,	West Newton
MARY MATILDA McLAUGHLIN,	West Newton
KENNETH WILSON OAKLEY,	Manasquan, N. J.
THOMAS MAURICE ORCHARD,	Carbondale
HOWARD READING PARS,	Linden
ELIZABETH McLEAN PATERSON,	Montgomery
JAMES KANE PETTITE,	Asbury Park, N. J.
FRANK HEILMAN RIALE,	South Williamsport
FRANK WESLEY RORABACH,	Lewisburg
PAUL E. SANDEL,	Lewisburg
KARL DAVID SMITH,	Catawissa
ERNEST FREDERICK SONDER,	South Williamsport
ELIZABETH FAIRCHILD SPYKER,	Lewisburg
ANNETTE AMELIA STAHL,	Lewisburg
GEORGE ALLEN STARKWEATHER,	Carbondale
RUTH STEIN,	Lewisburg
REXFORD ERVIN STONE,	Carbondale
CATHERINE GEHRETT THOMPSON,	Reedsville
HELEN GLADYS VANDYNE,	West Hazleton
CLYDE EARL RUSSELL WENBICH,	Sinking Springs
BENJAMIN JAMES WILSON,	West Pittston
RAYMOND A. WITCHEY,	Osceola Mills
CLYDE WILLIAM WITHINGTON,	Snydertown
EMMA IRENE YARNALL,	Lewisburg

## THE JUNIOR CLASS.

CLASS OF 1920.

NAME.	RESIDENCE.
HAROLD RAYMOND BAIR,	Vandergrift
JOHN NEVIN BAUMAN,	Danville
ROBERT KINSLOE BELL,	Mount Union
GEORGE NORMAN BENJAMIN,	Chester
HOBART GEISSINGER BIEHN,	Quakertown
DAWSON FLOYD BLOOM,	Sunbury
WILLIAM JENNINGS BRYAN BLOOM,	Sunbury
LAMBERT TEUFEL BOTTS,	Milton
MARGARET IRENE BROWN,	Lewisburg
MERRILL WILSON BROWN,	Lewisburg
NELSON ELLSWORTH CHANCE,	Dividing Creek, N. J.
RUTH PRETTYMAN CLARK,	Collingswood, N. J.
VINCENT PAUL CONNELLY,	Branchdale
ELTHERA GLENN CORSON,	Bridgeton, N. J.
JOHN CAMPBELL CRAIG,	Philadelphia
CHLOE PEARL CROSLEY,	Hughesville
DAVID RAYMOND CROSSGROVE,	Lewisburg
ETHYLE DOUGLAS CULBERT,	Elizabeth
HERBERT SETLEY DELONG,	Watsontown
JOSEPH DAYKIN DENT,	Pittsburgh
ERROL HUNT DERBY,	Scranton
MERRILL BROWN DEWIRE,	Lewisburg
STEPHEN FREDERICK DIMLICK,	Scranton
MARION ELLENBOGEN,	Danville
MARK REUBEN EVERETT,	Slatington
ROBERT BOYER FAUST,	Sunbury
BEATRICE MAY FETTERMAN,	Hazleton
JULIUS ORVILLE FRAKER,	Orbisonia
EDITH AMANDA GARDNER,	Carbondale
GEORGE EWAN GASKILL,	Philadelphia
MARY KATHRYN GLOVER,	Vicksburg
MARION KATHRYN GOHO,	Lewisburg
MARY ARBUTUS HARNER,	Elkton, Va.
HENRY URIAH HECKART,	Sunbury
THOMAS JACOB SHAFER HEIM,	Lewisburg
AGNES HOFFMAN,	Chadd's Ford
IRVIN VALENTINE HOLMES,	Mawr Glen
LOUISA HOWELLS,	Carbondale
EDWIN WEIMER HULL,	Montgomery

NAME.	RESIDENCE.
EVAN WILLIAM INGRAM,	Nanticoke
KATHERINE ELLEN JOHNSON,	Williamsport
LLEWELLYN JONES,	Plymouth
HENRY KITLOWSKI,	Nanticoke
EDWARD CLINTON KOLB,	Westmont, N. J.
ROBERT SIMINGTON KYLE,	Milton
GEORGE WALTER LEES, JR.,	Camden, N. J.
WILLARD LEGRANDE LEWIS,	Thompson
CECILIA ABIHAIL LINCH,	Elmer, N. J.
ESTA MINNIE LONG,	Lima, Ohio
PEARL AILEEN LOTT,	West Pittston
GEORGE LOXLEY LOWRY,	Friendship, N. Y.
HENRY CLAY LUCAS,	Lewisburg
MICHAEL JOSEPH MAGGIO,	Ralston
DAVID JAMES MARTIN,	Scranton
JOHN ARLINGTON MASON,	Williamsport
ANDREW RUSSELL MATHIESON,	Munhall
HAROLD EDWARD MILLER,	Lewisburg
HENRY LEWIS DAVIS MOORE,	Bridgeton, N. J.
WILLIAM HENRY MORRISON, JR.,	Philadelphia
HELEN LOUISE MOYLE,	Plymouth
FRANCES ADA MCFARLAND,	Watsonstown
PAUL JOHN MCGUIRE,	Homestead
HARRY LEROY NANCARROW,	Jersey Shore
GLENN EDWIN OTT,	Orbisonia
ELIZABETH NARCISSA PATTERSON,	Kirkwood
FELIX PIEKARSKI,	Nanticoke
CLARENCE HENRY PONTIUS,	Sunbury
EVELYN GWENDOLYN POWELL,	Edwardsville
JOY TILLMAN PROSS,	Lewisburg
WILBUR BARNER REAM,	Lewisburg
HELEN REED,	New Brunswick, N. J.
HENRY CLAY REED,	Lock Haven
ELTON PHILIPS RICHARDS,	Wilkes-Barre
JAMES EDWARD ROBBINS,	Lewisburg
WILLIAM JOHN ROLF,	Scranton
WALTER DRY ROOS,	Reading
DWIGHT WILLIAM RUDE,	Waymart
MARY PAULINE SCHENCK,	Morristown, N. J.
ANTHONY ALFONSE SCHWENKLER,	Mount Carmel
FURMAN WATSON SHAW,	Haddonfield, N. J.
ABRAHAM LINCOLN SHERK,	Camden, N. J.

NAME.	RESIDENCE.
MARGARET SNOVER SIPLEY,	Lewisburg
WARREN HENRY SLOCUM,	Reading
GEORGE ADDISON SMITH,	Flanders, N. J.
ROBERT BRUCE SMITH,	Hughesville
ROY DIETRICK SNYDER,	Hazleton
WILLIAM EVERETT CLARK SPEARE,	Lewisburg
ANNA LEILA STERLING,	Meshoppen
PAUL HENRY STOLZ,	Philadelphia
DOROTHY MARIE THOMPSON,	Woodlynn, N. J.
GEORGE WASHINGTON VANDYKE,	Salem, N. J.
ROBERT NORMAN WADDELL,	Pittsburgh
KATHRYN LUETTA WAGNER,	Lewisburg
HARRY JOHN WAGONER,	Philadelphia
HELEN MCCORMICK WALTON,	Williamsport
HARRY REDCAY WARFEL,	Reading
ADELIA LOVINIA WILKES,	Erie
THEODORE COURTLANDT WILLIAMS,	Vineland, N. J.

Juniors, 98.

THE SOPHOMORE CLASS.  
CLASS OF 1921.

NAME.	RESIDENCE.
SARAH ELIZABETH ADAMS,	Coatesville
ROBERT WALTER ANGSTADT,	Lewisburg
MARY EDNA BAKER,	Lewisburg
HELEN SCHEIDY BECK,	Catasauqua
MARY ELIZABETH BEIRNE,	Wilkes-Barre
MATILDA ELIZA BELL,	New Millport
LUKE REYNOLDS BENDER,	Milton
SARAH MUSSER BERNHARDT,	Lewisburg
CHARLES HILAIRE BITNER,	Milton
CHARLES FRANKLIN BRANDT,	Sharon
GEORGE HOBART BROWN,	Morristown, N. J.
MARY LINCOLN CAREY,	West Downingtown
JOHN PACKER HAAS CARTER,	Sunbury
CLARA MARGARET CASNER,	Newberry
FOREST NATHANIEL CATHERMAN,	Mifflinburg
VICTOR GORDON CLARE,	Millville, N. J.
EVA GERTRUDE THAYER CLARK,	Bradford
HILDA DIXON COATES,	Plymouth
BARBARA HELEN COE,	Clymer
MARGUERITE NANCY COE,	Clymer
LYDIA COENE,	Paterson, N. J.
WILLARD HENRY COLLINS,	Lewisburg
EDWIN BAILEY COOKE,	Wilkes-Barre
ELIZABETH LUANA DAVIS,	Nanticoke
HERBERT NATHAN DERR,	Milton
EMILY KATHRYN DEVINE,	Dunmore
LOTTIE NOREENE DIETZ,	Danville
ESTHER VIRGINIA DODSON,	Westmont, N. J.
THOMAS RAYMOND DORRIS,	Nanticoke
HOLMES TOMLIN DOUGLASS,	Dias Creek, N. J.
RALPH MILLER DYER,	Elysburg
HOMER TITUS EATON,	Erie
WALTER PIERSON EDWARDS,	Gouldsboro
HAROLD SPENCER EISLEY,	Lewisburg
DAVID HOBART EVANS,	Wilkes-Barre
NELLIE FOLLMER EVERETT,	Lewisburg
ANNA GLADYS FAIRCHILD,	Milton
HATTIE COLE FERTIG,	Lewisburg



NAME.	RESIDENCE.
JOHN CRAIG FINNIGAN,	Belford, N. J.
GRACE RAU FOLLMER,	Milton
EMMA MAGDALENA FUHRER,	Scranton
KATHERINE MAY FULFORD,	Morristown, N. J.
HELEN GRACE GOOD,	Williamsport
ELIZABETH DUNBAR GROFF,	Montgomery
ROBERT PAUL HARTZ,	Reading
ALAN RICHARD HAUS,	Reading
RICHARD ROY HECKART,	Sunbury
EDWARD FIELDING HEIM,	Lewisburg
HENRY LEROY HELLER,	Reading
ANDREW LUKE HENRY,	Fairmont, W. Va.
GRANT OSWALD HERB,	Snydertown
JAMES LEO HESS,	Lewisburg
RAYMOND GERARD HIDLAY,	Bloomsburg
CAMERON BURNSIDES HOLTER,	Howard
JAMES BIGGER HUTCHINSON,	Scottdale
LUTHER PAUL ILGEN,	Mifflinburg
RUSSELL FOULKE KELLER,	Quakertown
SARAH KERSTETTER,	Lewisburg
CLARENCE HOFFMAN KEY,	Millville, N. J.
ALDEN PARK KING,	Succasunna, N. J.
OLIVER LINTON KING,	Quakertown
ELWIN LARUE KOHLER,	Hughesville
JOSEPH KOSTOS,	Mount Carmel
STANFORD LARUE KUNKLE,	Williamsport
HILDING ALFRED LARSON,	Port Allegany
MARTHA LEISER,	Lewisburg
WILLIAM WALLACE LEWIS,	Trevorton
MARGUERITE THERESA LOTTE,	Paterson, N. J.
WILLIAM MEREDITH LYBARGER,	Mifflinburg
FREDA CROWL MACKERETH,	Elkview
HANNAH MADISON,	Muncy
MURVINGTON HUNTER MALAUN,	Carbondale
EDNA MARTIN,	Lewisburg
WINFIELD SCOTT MASTERS,	Taylor
FLOYD KLINE MAYHOOD,	Blairsville
DOROTHY CONRAD MEIXELL,	Lewisburg
MARTIN KELLER MOHLER,	Ephrata
CLARENCE BYRON MOORE,	Reedsville
RUTH LILLIAN MOUNT,	Millington, N. J.
EFFIE MUIR,	Morristown, N. J.

NAME.	RESIDENCE.
HAROLD CLYDE McCULLOUGH,	Washington
JOHN DAVID MCGANN,	Harrisburg
GEORGE BESOLD NESLINE,	Sunbury
WILLIAM EDGAR NICHOLS,	South Williamsport
ELLA BOLTON OSBOURN,	Lewisburg
JAMES ALFRED PANGBURN,	Elizabeth
RACHEL MARY REED,	Maplewood, N. J.
CHARLES FREDERICK RIECKENBERG,	Great Neck, L. I.
ANDREW REXFORD ROLLER,	Picture Rocks
ROY WILLIAM SAUERS,	Mifflinburg
GEORGE JAY BEVIER SCHUYLER,	Williamsport
HOWARD CARL SHELLY,	Hazleton
HAROLD LAWSON SHIMER,	Milton
CHARLOTTE WALTON SIPLEY,	Lewisburg
CHELTON WINTHORF SMITH,	Milton
DONALD SMITH,	Flanders, N. J.
ROSWELL OSCAR BARNETT SMITH,	Morristown, N. J.
VERNA LOIS SMITH,	Mahanoy City
MARIE DOROTHY SPANGLER,	Milton
KATHRYN PFENNINGER SPOTTS,	Lewisburg
MARJORIE ELIZABETH SPROUT,	Picture Rocks
IGNAS MARTIN STADULIS,	Plymouth
GERTRUDE STEVENS,	Lansdowne
DAVID HADDON STEWARDSON,	Jersey City, N. J.
SELAH WOOD SUTTON,	Morristown, N. J.
FRANK THOMPSON TAYLOR,	Trenton, N. J.
LULU MARY TOMPKINS,	Morristown, N. J.
FRANKLIN SCHREYER TOWNSEND,	Milton
ELLA LARUE UNGER,	Shamokin
CHARLOTTE VOLKMAR,	Williamsport
STEPHEN JAMES WARGO,	Strong
ELIZABETH VANSCHOYCE WEIDNER,	Vineland, N. J.
NEVIN AMOS WEISNER,	Glassboro, N. J.
RALPH EMERSON WILKINSON,	Treverton
THOMAS STUART WILLIAMS,	Wilkes-Barre
WILLIAMS CHARLES ARTHUR WILLMAN,	Mount Carmel
JOHN LEE YARNALL, JR.,	Lewisburg
CHARLES ADAM ZELLER, JR.,	Dalton
ALVIN ADAMS ZWEIER,	Quakertown

Sophomores, 119.

## FRESHMAN CLASS.

CLASS OF 1922.

NAME.	RESIDENCE.
MARGARET EVANS ABBOTT,	Haddonfield, N. J.
ALEXANDER ALOYSIUS ALESHOUCKAS,	Great Neck, N. Y.
JOHN DETKI ALEXANDER,	Philadelphia
DONALD CARGILL ALLEN,	Lewisburg
MARY ELIZABETH APPLEMAN,	Pittsburgh
NORMAN ROY APPLETON,	Philadelphia
NELLIE WOLFE AUMILLER,	Lewisburg
NELLIE CARROLL BALLIET,	West Nanticoke
WILLIAM ELWOOD BALLIET,	Milton
AUDREA ARLINE BAUMEISTER,	York
GORDON PRESTON BECHTEL,	Reading
ALLEN BENTHOM BEDDOE,	Dickson City
FRED STURGES BEERS,	Dalton
JOHN ROBERT BEERS,	Dalton
SANFORD BERNINGER,	Mifflinville
RALPH OSWALD BIER,	Sunbury
CLARENCE W. BINGEMAN,	Treverton
DESSIE ALBERTA BLAKER,	Charleroi
RUTH HANNA BROWN,	Ewan, N. J.
GEORGE WELLINGTON BUFFINGTON,	Millersburg
EVA BOLLES BUNNELL,	Montrose
RHEA ARDELLE BURGETT,	Homer, N. Y.
JENNIE BURKE,	Bordentown, N. J.
HARRY MILLER CALHOUN,	Port Allegany
PHILIP CLARENCE CAMPBELL,	Danville
IVAR CARL CARLSON,	Port Allegany
ALMET MONROE CASE,	Waverly, N. Y.
MARIE JOSEPHINE CHAMBERS,	Nanticoke
EARL AUGUSTUS CLARK,	Collingswood, N. J.
FLORENCE DOROTHY CORNWELL,	Plainfield, N. J.
CARRIE ELIZABETH COUFFER,	Steelton
GEORGE RAYMOND CRAWFORD,	Mifflinburg
EDWARD CLEAVER CROWL,	Elysburg
FORREST FRANKLIN DAGLE,	Northumberland
DONALD ARTHUR DALLMAN,	Harrisburg
HOWARD THOMAS DAVENPORT,	Plymouth
DANIEL WEBSTER DAVIS,	Nanticoke
NELSON FITHIAN DAVIS, JR.,	Lewisburg

NAME.	RESIDENCE.
PHCEBE BEATRICE DAVIS,	Olyphant
WILLIAM LEROY DEHAVEN,	Duncannon
HAROLD DAVIS DENTLER,	Milton
CHESTER HENRY DERCK,	Trevorton
LILLIAN JANE DERR,	Turbotville
LEONA SOPHIA DICKRAGER,	Tionesta
CHARLES EMORY DIFFENDAFER,	Nanticoke
CHARLES RAYMOND DWYER,	Pottstown
FRIEDA EVA EBNER,	Glassboro, N. J.
MYRA CATHERINE EFFINGER,	Altoona
FLORENCE CAROLINE ERBECK,	Connellsville
RICHARD K. ESTELOW,	Mount Holly, N. J.
HAYDEN J. EVANS,	Johnstown
MARGERY GENEVA FARLEY,	Mifflinburg
JOSEPH MARION FITTING,	Enders
JOSEPH THOMAS FITZPATRICK,	Treverton
ESTHER MARIE FLEMING,	Paterson, N. J.
HAROLD GUSTAR FLORIN,	Johnsonburg
EDNA MAY FOLLMER,	Milton
FREDERICK ALFRED FOXALL,	Wilkes-Barre
HERBERT SPENCER FRANKLIN,	Morristown, N. J.
GRACE CARVER FRY,	Duncannon
WALTER DENTON GALBRAITH,	Johnstown
JOHN BUXTON GALE,	West Chester
ARTHUR FRANK GARDNER,	Harrisburg
MARK KUEBLER GASS,	Sunbury
GRACE GOOD,	Watsonstown
BRIGHT ELLSWORTH GREINER,	Winfield
LEWIS G. GRIFFITHS,	Seranton
LUCILE ANITA GUTELIUS,	Mifflinburg
VERA EVELYN HAAS,	York
GEORGE WEBSTER HAUPT,	Sunbury
HULDA DOROTHEA HEIM,	Williamsport
ELOISE ERNESTINE HILL,	Williamsport
WALTER L. HILL, JR.,	Seranton
WADE F. HOFFMAN,	Vandergrift
CHARLES M. HOWER,	Bloomsburg
JOHN HUGHES,	Holidaysburg
RICHARD KELLY HUTCHISON,	Altoona
WILLIAM JACKSON IRVIN,	Lewisburg
CASSIMER JOSEPH JARKA,	Mount Carmel
HARRY WARREN JOHNSON,	Lewisburg

NAME.	RESIDENCE.
WILLIAM SPENCER JOHNSON,	Harrisburg
HELEN LOUISE JOHNSTON,	Altoona
FINLEY KEECH,	Netcong, N. J.
JAMES KENNETH KENNEDY,	Milton
RUTH KING,	Muncy
HARRIET PAULINE KINSMAN,	Plymouth
ANGELINE RUTH KISSINGER,	Reading
HELEN FELECIA KITLOWSKI,	Nanticoke
ADAM ALFRED KLEIN,	Wilkes-Barre
RALPH ADAM KLEMM,	Philadelphia
LEANDER SWARTZ KLINGMAN,	Dalmatia
GERALDINE HARRIET KOCHER,	Berwick
KARL KRUG,	Reading
ELMER CHARLES KYLE,	Milton
HUGH D. KYTTLE,	Nanticoke
ELIZABETH LAEDLEIN,	Williamsport
ROY HORST LANDIS,	Union Deposit
HARRY LABERTE LAPP,	Trenton, N. J.
LAWRENCE W. LAWSON,	Latrobe
WILLIAM VERNON LAWTON,	Quakertown
ROBERT EARL LEPPERD,	Duncannon
A. KENNETH LEWIS,	Homestead
WELLES NORWOOD LOWRY,	Carbondale
REBA EVA MACKENTHUM,	Philadelphia
CORINNE MACNAMARA,	Thompson
GEORGA A. MATHIESON,	Munhall
EARL BALLIET MICKLEY,	Coplay
ALBERT BOWERS MORRISON,	Philadelphia
VINCENT VICTOR MULLEN,	Latrobe
JAMES G. MYERLY,	Wilkes-Barre
CARROL MYERS,	Williamsport
CHARLES ALBERT MCDOWELL,	Latrobe
EDWIN JOHN MCGILL,	Holidaysburg
ALTA GRACE NICKUM,	Allentown
MIRIAM CAMMON OAKLEY,	Manasquan, N. J.
LEO HENRY OBERT,	Dushore
PHILIP EDGAR OPP,	Muncy
DOROTHY CAROLYN OWEN,	Hazleton
MARY RACHEL PARK,	Montandon
WILLIAM WINFIELD PARRY,	Lebanon
CHARLOTTE ELIZABETH PETERS,	Allentown
HARRY IMMANUEL PETERSON,	Jersey Shore

NAME.	RESIDENCE.
CATHERINE D. PETTIGREW,	Olyphant
SUSANNA HARRIS PLUMMER,	Quinton, N. J.
GRACE POUST,	Muncy
ROBERT HAROLD REITZ,	Trevorton
GEORGE READING RENTZ,	Williamsport
ETHEL REBA RICHARDSON,	Reading
CHARLES PHILIPS RITTER,	Montgomery
SAMUEL PERRY ROGERS,	Jeffersonville
ANDREW LONG ROONEY,	Holidaysburg
MAX ABRAM ROSENBLUM,	Austin
EVAN WILLIS ROSS,	Latrobe
CLARISSA MARGUERITE MAY RUSSELL,	Keating
LAURA BELL SAMPSON,	Philadelphia
PAUL GEORGE SCHMIDT,	Reading
ROBERT RICHARD SCHULTZ,	Bloomsburg
RAY PAULINE SEAMAN,	Lewisburg
MARVIN AYRES SEARLES,	Morristown, N. J.
AMORITA MURIEL SESINGER,	Pitman, N. J.
HARRY EDWARD SHAFFER,	Chambersburg
MARY ELDRIDGE SHOLL,	Burlington, N. J.
JAMES HENRY SHOTT,	Reading
EDOUARD BURNSIDES SISSERSON,	Westfield, N. J.
ETHELWYNNE MAE SMITH,	Lewisburg
HERMAN M. SMITH,	Trevorton
LAURA L. SMITH,	Reading
DEWEY ALVIN SNYDER,	Muncy
JOSEPH WHITNER SNYDER,	Lewisburg
HUGH PENN SOWERS,	Steelton
CATHERINE YOUNG STAHL,	Lewisburg
JOHN CALVIN STAHL,	Lewisburg
EDYTHE SUSANNA STATLER,	Johnstown
HARRY HORTON STECK,	Muncy
HANNAH EDITH STEELEY,	Shamokin
THOMAS REBER STEIN,	Sunbury
NORMAN L. STEWART,	Huntingdon
ROY BRATTON STINE,	Tyrone
LEON LYLE STONE,	Thompson
LOUIS CARL STUNTZNER,	Norwood, Mass.
WILLIAM HERBERT SUGDEN,	Wilkes-Barre
GRACE MATILDA SWAN,	Altoona
SARAH ANNA SWARTZ,	Pennbrook
AUDREY PROUDFIT TAYLOR,	McDonald



NAME.	RESIDENCE.
JANET LEE TENANT,	Spraggs
FREEMAN THAYER TINGLEY,	Dimock
EMILY ROBINSON TREGELLAS,	Mahonoy City
GEORGE ALLISON VALSING,	Liberty
FRANCES EDSALE VANCLEAF,	Stockholm, N. J.
SALLIE GRACE VICKERS,	Lewisburg
ALVIN SNYDER WAGNER,	Lewisburg
FRANCIS CLEMENT WALSH,	Hollidaysburg
CLARA WASILEWSKI,	Nanticoke
CORA ELSIE WATSON,	Frostburg, Md.
LOIS KATHRYN WENTLING,	Conshohocken
EDWARD GEORGE WENTZEL, JR.,	Philadelphia
EUGENE WOODFORD WEST,	Apollo
ROSSLYNN KNIES WHETSTONE,	Sunbury
HERMAN ERNEST WIAINT,	Huntingdon Mills
MARY ELIZABETH WICKUM,	Altoona
MARY JANE WILLIAMSON,	Charleroi
CHARLES IMBRIE WILSON,	Jersey City, N. J.
RAYMOND HERBERT WILSON,	Carbondale
MARCELLA JANE WOOD,	Manifold
ELMER LARUE WORTHINGTON,	Eagles Mere
Freshmen, 185.	

## SPECIAL.

PERCY BOUGHEY,	Montandon
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## STUDENTS' ARMY TRAINING CORPS.

## OFFICERS.

CAPTAIN JAMES H. BEAZLEY, U. S. A. F. A.,

COMMANDANT.

LIEUTENANT ROBERT B. BETTS.

LIEUTENANT ROBERT D. BILLINGER.

LIEUTENANT ALBERT V. ZIMMERMAN.

## EMERGENCY TEACHERS.

MISS THYRZA BROMLEY, A.B.,

FRENCH.

MISS MARGARET MCCLURE, A.B.,

FRENCH.

MRS. NELSON F. DAVIS, A.B.,

BIOLOGY.

MRS. GLENN V. BROWN, A.B.,

CHEMISTRY.

FRANKLIN DELAVERGNE JONES,

CHEMISTRY.

THOMAS MAURICE ORCHARD,

DRAWING.

IRVIN VALENTINE HOLMES,

TRIGONOMETRY.

GEORGE LOXLEY LOWRY,

TRIGONOMETRY.

## STUDENTS IN ARMY TRAINING CORPS.

NAME.	RESIDENCE.
Abrams, Samuel	Milton
Ahrens, Edwin Fred	North East
Aleshouckas, Alexander Aloysius	Great Neck, N. Y.
Allen, Donald Cargill	Lewisburg
Anthony, Thomas Harry	Shamokin
Anderson, Carl Leonard	Kane
Anderson, Vernon Carl	Kane
Angel, Harry Herman	Williamsport
Ande, Ira Roscoe	Hughesville
Angstadt, Robert Walter	Lewisburg
Apenich, John Joseph	Nanticoke
Arnfield, Kenneth Shatzle	Moosic
Atkinson, George Russell	Philadelphia
Baney, Harold Franklin	Lewisburg
Bardole, Chester Leon	Watsonstown
Barasaconi, Francis Joseph	Sunbury
Bartosavitz, Frank	Mount Carmel
Bauman, John Nevin	Danville
Ball, Joseph Russell	Hawthorne, N. J.
Beitzle, David Powell	Scranton
Bell, Robert Kinsloe	Mt. Union, Pa.
Bender, Luke Reynolds	Milton, Pa.
Benjamin, George Norman	Chester
Bennett, Charles Wilfred	Berlin
Berninger, Sanford	Mifflinville
Biehn, Hobart Geissinger	Quakertown
Bier, Ralph Oswald	Sunbury
Bitner, Charles Hilaire	Milton
Bechtel, Gordon Preston	Reading
Bogart, Paul Clifton	Bradford
Borts, James Milton	Vandergrift
Botts, DeWitt Kieffer	Milton

NAME.	RESIDENCE.
Botts, Lambert Teufel	Milton
Brown, George Hobart	Morristown, N. J.
Brown, Merrill Wilson	Lewisburg
Burger, George Alfred	Union City
Buck, Cleon	Hughesville
Bozarth, George Leading	Vineland
Brandt, Franklin Charles	Sharon
Buffington, George Wellington	Millersburg
Baker, Paul Newton	Espy
Bloom, William Jennings Bryan	Sunbury
Calhoun, Harry Miller	Port Allegany
Carlson, Ivar Carl	Port Allegany
Carter, John Packer Hass	Sunbury, Pa.
Casale, Michael Philip	Williamsport
Case, Almet Monroe	Waverly, N. J.
Catherman, Forrest Nathaniel	Mifflinburg
Catherman, Wayland A.	Mifflinburg
Chance, Nelson Ellsworth	Dividing Creek, N. J.
Chapman, Marcus Marcellus	Vandergrift
Christopher, Charles Francis	McClellandtown
Clare, Victor Gordon	Millville, N. J.
Clark, Earl Augustus	Collingswood, N. J.
Collins, Willard Henry	Lewisburg
Cooke, Edwin Bailey	Wilkes-Barre
Cooper, Wilbur Richard	Plymouth
Cowdrick, Edgar LaRue	Williamsport
Crawford, George Raymond	Mifflinburg
Cullen, William Joseph	Hazleton
Cupp, Emerson Collins	Milton
Dallman, Donald Arthur	Harrisburg
Davenport, Howard Thomas	Plymouth
Davis, Daniel Webster	Nanticoke
Day, Charles Alexander	Bradford
DeHaven, William LeRoy	Duncannon
Deibler, Merlin Arnold	Snydertown

NAME.	RESIDENCE.
DeLong, Herbert Setley	Watsontown
Deppen, Elwood Fairchild	Harrisburg
Derby, Errol Hunt	Scranton
Derr, Herbert Nathan	Milton
Dersham, Luther H.	Danville
Diffendafer, Willard T.	Nanticoke
Dillon, Francis Henry	Union City
Dodson, Ralph Coffman	Williamsport
Donnel, William Logan	DuBoistown
Dorey, Francis Hayes	Lock Haven
Dorris, Raymond Thomas	Nanticoke
Douglas, Holmes Tomlin	Cape May Court House, N. J.
Dyer, Paul Utz	Lepes
Dyer, Ralph Miller	Elysburg
Douty, Norman Franklin	Rebersburg
Danowski, Frank	Shenandoah
Eisley, Harold Spencer	Lewisburg
Earle, James DeLaMontague	Lewisburg
Eaton, Homer Titus	Erie
Edward, Raymond Horace	Bloomsburg
Edwards, Walter Pierson	Gouldsboro, Pa.
Englehart, Stanley Judson	Reading
Evans, Hayden J.	Johnstown
Evans, William Henry	Nanticoke
Everett, Mark Reuben	Slatington
Faust, Lee Edward	Shamokin
Faust, Robert Boyer	Sunbury
Faux, Ivan Clarence	Sunbury
Feerar, Ellery Raymond	Williamsport
Fitzpatrick, Joseph Thomas	Trevorton
Fox, George Martin	Johnston
Foxall, Fred Alfred	Wilkes-Barre
Fraker, Julius Orville	Orbisonia
Franklin, Herbert Spencer	Morristown, N. J.
Frazee, Lewis Franklin	Keansburg, N. J.

NAME.	RESIDENCE.
Friedman, John Eugene	Sunbury
Frymyer, Frank Dewey	Milton
Gale, John Buxton	West Chester
Gardner, Arthur Frank	Harrisburg
Gardner, Donald Bennison	Howard
Garnhart, George Harold	Watsonstown
Gass, Clyde Ellsworth	Danville
Gerhart, Weber Latcha, Jr.	Lewisburg
Goerlitz, Carl Frank	Scranton
Gonia, Daniel Jacob	Smethport
Goodwin, Edwin Adam	Reading
Green, Durward Everett	Picture Rocks
Griffith, Dalzell Melvin	Johnstown
Griffiths, Lewis G.	Scranton
Grittner, Paul Samuel	Turbotville
Fowler, Frank Scott	Kane
Frankhouser, Elmer	Adamstown
Gall, Davis Christian	Philadelphia
Haag, Boyd McKinley	Lock Haven
Hartman, Paul Elmer	Oley
Hall, Voris Blaine	Montgomery
Harer, Howard LaVerne	Williamsport
Hartz, Robert Paul	Reading
Hauck, Donald Cope	Sunbury
Haughey, James Peter	Vineland, N. J.
Haupt, George Webster	Sunbury
Haus, Alan Richard	Reading
Heckart, Richard Roy	Sunbury
Heim, Edward Fielding	Lewisburg
Heller, Henry LeRoy	Reading
Herb, Grant Oswald	Snydertown
Herman, James Russell	Edwardsville
Herrold, Earl Penrose	Shamokin
Hertzler, Earl Bucher	Richland
Hess, James Leo	Lewisburg



NAME.	RESIDENCE.
Hill, Seth Arthur	Milton
Hodgson, Ralph Hooper	Plymouth
Holsing, William Frederick	Canonsburg
Hoffman, Wade	Vandergrift
Holshue, Galens	Shamokin
Horlein, Edwin Albert	Smethport
Hughes, John	Hollidaysburg
Hunter, Cartwright Maxwell	Wilmington, O.
Hutchinson, James Bigger	Scottdale
Hutchinson, Richard Kelly	Altoona
Heefner, Grant Clifford	Waynesboro
Hammer, Randolph Huber	Reading
Hall, John Emlin	Harrisburg
Irvin, William Jackson	Lewisburg
Ingram, Evan William	Nanticoke
Jarka, Casimir Joseph	Mount Carmel
Jester, George Edward	Newton, Mass.
Johnson, Edward Leonard	Kane
Johnson, Paul Gotfried	Kane
Johnson, William Spencer	Harrisburg
Johnson, Cyrus William	Lewisburg
Jones, Herbert Spencer	Scranton
Jordan, Leon Cecil	Clarks Summitt
Klein, Adam Alfred	Wilkes-Barre
Kauffman, John Metz	Hughesville
Keiler, Arthur Reed	Jersey Shore
Kellogg, Walter Hungerford	Dalton
Kennedy, James Kenneth	Milton
Key, Clarence Hoffman	Millville, N. J.
King, Alden Park	Succasunna, N. J.
King, Oliver Linton	Quakertown
Kitlowski, Henry	Nanticoke
Klechner, Garth	Lock Haven
Klemm, Ralph Adam	Philadelphia
Kohler, Elwin LaRue	Hughesville

NAME.	RESIDENCE.
Kostenbauder, Paul Parker	Plymouth
Kramer, Edward Vanleer	Sunbury
Krug, Karl	Reading
Kremer, Charles Daniel	Watsonstown
Krantz, Harold M.	Carbondale
Kunkle, Stanford La Rue	Williamsport
Kyle, Charles Elmer	Milton
Landis, Roy Harts	Union Deposit
Lapp, Harry LaBerte	Trenton, N. J.
Larson, Hilding Alfred	Port Allegany
Lawson, Lawrence Winters	Latrobe
Lawton, William Vernon	Quakertown
Leaber, Chester Robert	Williamsport
Lees, George Walter, Jr.	Camden, N. J.
Lehman, Karl Maine	Williamsport
Leinbach, Thomas Kauffmann	Reading
Lepperd, Robert Earl	Duncannon
Lewis, Arthur Kenneth	Homestead
Lewis, Raymond Plank	Lewisburg
Lewis, William Wallace	Trevorton
Kunkel, George Merrill	Lewisburg
Ling, Thomas Whyte	Johnstown
Little, Richard Jr.	Clarks Summit
Lowing, James Alonzo	Kane
Lowry, George Loxley	Friendship, N. Y.
Lowry, Welles N.	Carbondale
Lucas, Floyd Edward	Lock Haven
Ludwig, Wallace Vickers	Carbondale
Lundquist, Benjamin B.	South Williamsport
Lupso, Vincent Fabian	Nanticoke
Lybarger, William Meredith	Mifflinburg
Lees, John Thomas	Scranton
Lees, William Arthur	Scranton
Malaun, Murvinton Hunter	Carbondale
Markowitz, Robert	Pottstown

NAME.	RESIDENCE.
Martin, Theron B.	Paxinos
Martz, Ralph David	Sunbury
Mason, John Arlington	Williamsport
Mathieson, Andrew R.	Munhall
Mathieson, George	Munhall
Mayhood, Floyd Kline	Blairsville
Meckley, Orvis Sidney	Kane
Meisner, Davis	Newark, N. J.
Messner, Leon Milton	Sunbury
Merrill, Daniel Horton	Montrose
Miller, Glenn Augustus	Lamar
Miller, William Charles	Lock Haven
Mincemeyer, John Monroe	Picture Rocks
Moffatt, Walter T.	Bradford
Moore, Henry Lewis Davis	Bridgeton, N. J.
Morrison, Albert Bowers	Philadelphia
Morrow, Grantham Keyser	Jersey Shore
Mullen, Vincent Victor	Lathrobe
Myerly, James Gillaspay	Wilkes-Barre
McCreight, Robert	Elmira, N. Y.
McGann, John Davis	Harrisburg
McGill, Edwin John	Hollidaysburg
McGregor, Frank	Vandergrift
McGuire, Paul John	Homestead
McKeever, Richard Edward	Shamokin
McCurdy, Joseph Griffith	Wildwood, N. J.
Moore, Howard Harrison	Reynoldsville
Nancarrow, Harry LeRoy	Jersey Shore
Nesline, George Besold	Sunbury
Newkirk, Mervin Cecil	Reading
Nicholas, William Edgar	Williamsport
Niklewski, Edmund	Nanticoke
Norton, James Arland	Dalton
Oakley, Kenneth Wilson	Manasquan, N. J.
O'Connor, William H.*	Port Allegany

NAME.	RESIDENCE.
Olaszewski, Anthony Joseph	Mount Carmel
Olson, Leonard A.	Osceola Mills
O'Neal, Ira Donald	Uniontown
Opp, Philip Edgar	Muncy
Ott, Glenn Edwin	Orbisonia
Olson, Leonard Asel	Osceola Mills
Page, William Edward	Duncannon
Parry, William Winfield	Lebanon
Peifer, George Torrence	Danville
Peter, Alexander Monroe	Slatington
Peterson, Harry Immanuel	Ralston
Pickell, George Leslie	Jersey City, N. J.
Piekarski, Felix	Nanticoke
Piper, John Lloyd	Doyleburg
Powell, John Davis	Scranton
Price, LeRoy Harold	Reading
Pars, Howard Reading	Linden
Ream, Wilbur Barner	Lewisburg
Rauch, Irl Owen	Slatington
Reed, Henry Clay	Lock Haven
Reeves, Clarence Howard	Succasunna, N. J.
Reitz, Robert Harold	Trevorton
Rentz, George Reading	Williamsport
Reynolds, George Davis	Spruce Creek
Reynolds, Norman Kapp	Spruce Creek
Richards, Elton Phillips	Wilkes-Barre
Richards, Roland	Danville
Rickenberg, Charles Frederick	Bayside, N. Y.
Ritter, Charles Philip	Montgomery
Robley, Richard M.	Berlin
Rooney, Andrew Long	Hollidaysburg
Roos, Walter Dry	Reading
Rosenbloom, Max Abraham	Austin
Rosenbloom, Sidney G.	Austin
Rougeux, Francis Edward	Newberry

NAME.	RESIDENCE.
Rude, Dwight William	Winfield
Redmond, Hugh Rodney	Montrose
Rolf, William J.	Williamsport
Sack, Philip Henry	Lock Haven
Sander, Howard Edward	Williamsport
Sanner, Harold Lynn	Shamokin
Schertzinger, Carl Beaver	Slatington
Schieffelin, Jacob Jr.	Bradford
Schleh, Eugene Edward	Williamsport
Schmidt, Paul George	Reading
Schneider, Herman August	Williamsport
Schreyer, William Linn	Williamsport
Schultz, Robert Richel	Bloomsburg
Schumacher, William Paul	South Williamsport
Starkweather, George Allen	Carbondale
Searles, Marvin Ayers	Morristown, N. J.
Serven, LeRoy Hopper	Paterson, N. J.
Shaffer, Harry Edward	Chambersburg
Shaughnesy, Myron Emmanuel	Mt. Jewett
Shaw, Almon George	Latrobe
Shelly, Howard Carl	Hazleton
Sheridan, Robert Henry	Williamsport
Shimer, Harold Lawson	Milton
Shipe, John W.	Treverton
Shontz, Raymond Arthur	Shamokin
Shuttleworth, Howard Reed	Williamstown
Sidler, Henry Divel	Danville
Simons, Leo Glenn	Kane
Slocum, Warren Henry	Reading
Smith, Chelton Winthorf	Milton
Smith, George Addison	Flanders, N. J.
Smith, Herman Mengel	Treverton
Smith, Robert Bruce	Hughesville
Sonder, Ernest Fred	South Williamsport
Snyder, Dewey Alvin	Muncy

NAME.	RESIDENCE.
Snyder, Roy Dietrick	Hazleton
Speare, William Everett Clark	Lewisburg
Spence, George Matthew	Hastings
Stadulis, Ignas Martin	Plymouth
Stauffenburg, Clarence Martin	Hazleton
Stock, Harry Horton	Muncy
Steese, Charles Marlyn	Mifflinburg
Stein, Thomas Reber	Sunbury
Stewardson, David Haddon	Jersey City, N. J.
Steward, Norman Lytle	Huntingdon
Stine, Roy Bratton	Tyrone
Stolz, Paul	Reading
Stone, Leon Lyle	Thompson
Stover, Sirley Samuel	Bradford
Stuntzner, Louis Karl	Norwood, Mass
Sugden, William Herbert	Wilkes-Barre
Sutton, Selah Wood	Morristown, N. J.
Stahl, John Calvin	Lewisburg
Starr, Herbert Arthur	Bradford
Seaman, Cecil	Lewisburg
Taylor, Frank Thompson	Trenton, N. J.
Thamm, John Kenneth	Bradford
Tingley, Freeman Thayer	Dimock
Townsend, Franklin Schreyer	Milton
Trexlor, Malcolm Kirk	Lock Haven
Thomas, Willard Francis	Scranton
Sisserson, Edward B.	Westfield, N. J.
Ulrich, Selin D.	Selinsgrove
Valsing, George Allison	Liberty
VanDyke, George Washington	Salem, N. J.
Vredenberg, Lawrence Alexander	Muncy
Waddell, Robert Norman	Pittsburgh
Wagner, Alvin Snyder	Lewisburg
Warfel, Harry Redcay	Reading
Wargo, Stephen James	Mount Carmel



NAME.	RESIDENCE.
Watt, Karl Murray	Kittanning
Weaver, Ralph Edgar	Sunbury
Weigle, James Edward	Homestead
Weiner, Abraham	Danville
Weisner, Nevin Amos	Glassboro, N. J.
Wentzler, Carl William	Pennsdales
West, Eugene Woodford	Apollo
Whetstone, Rosslyn Kneiss	Sunbury
Wilkinson, George	Mt. Carmel
Wilkinson, Ralph Emerson	Trevorton
Willman, William Charles	Mount Carmel
Wilcox, Jesse Gay	Williamsport
Wilson, Charles Imbrie	Jersey City, N. J.
Wilson, Raymond Herbert	Carbondale
Winter, Raymond Burrows	Mifflinburg
Wood, Abram Scott	Lawrence, N. Y.
Worthington, Elmer LaRue	Eagles Mere
Williams, Morgan Edgar	Tamaqua
Williams, Thomas Stuart	Wilkes-Barre
Wilson, Benjamin James	West Pittston
Yarnall, John Lee, Jr.	Lewisburg
Young Maxwell Spencer	Beesley's Point, N. J.
Yosua, Michael Anthony	Osceola Mills
Zeller, Charles Adam, Jr.	Dalton
Zweier, Alvin Adam	Quakertown

Army Corps, 372.

#### NAVAL RESERVES.

Fox, Joseph Dallas	Milton
Hidlay, Raymond Gerard	Bloomsburg
Kolb, Edward Clinton	Lewisburg
Mohler, Martin Keller	Ephrata
Morrison, William Henry	Philadelphia
Nogle, Harold Thomas	Lewisburg

NAME.	RESIDENCE.
Riale, Frank Hertman	South Williamsport
Rorabach, Frank Wesley	Lewisburg
Sherk, Abraham Lincoln	Camden, N. J.
Wagoner, Harry John	Philadelphia
Walters, George Richard	Williamsport
Kyle, Robert Simington	Milton
DeWire, Merrill Brown	Lewisburg
Holleran, Clifford Ambrose	Watertown, Conn.
Naval Reserves, 14.	

## ENGINEER RESERVES.

Holter, Cameron Burnsides	Howard
Kostos, Joseph	Mount Carmel
Schwenkler, Anthony Alfonse	Mount Carmel
Shaw, Furman Watson	Haddonfield, N. J.
Engineer Reserves, 4.	

## SUMMARY.

Graduate Students .....	42
The Senior Class.....	79
The Junior Class.....	98
The Sophomore Class.....	119
The Freshman Class.....	185
Special Student .....	1
Army Training Corps.....	372
Naval Reserves.....	14
Engineers .....	4
Students of Music .....	122
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Total (less names repeated).....	793

## THE SCHOOL OF MUSIC.

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### FACULTY.

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PAUL GEORGE STOLZ, A.M., DIRECTOR,  
SCIENCE OF MUSIC, VOICE.

(Bucknell School of Music, Dr. Elysée Aviragnet, A.M.; Dr. Hugh Schussler, New York; Emrich and Soehnlín, Berlin, Germany.)

CHARLOTTE GUION ARMSTRONG,  
VIOLIN, HISTORY OF MUSIC.

(Wyoming Seminary; New England Conservatory; Musin, New York City.)

ETTA ALTHEA BROWN,  
VOICE, SIGHT SINGING.

(Bucknell School of Music; Oscar Saenger, New York City; E. M. Young, New England Conservatory.)

ANNA MARTHA PINES,  
SUPERVISOR'S COURSE.

(Bucknell School of Music; Combs's Conservatory, Philadelphia; Cornell University, Ithaca, N. Y.)

\*DAVID MOYER BERLINO,  
PIANO, ADVANCED HARMONY.

(Alberta Jonas, Berlin; Ernst von Dohnanyi, Berlin.)

JESSIE LOUISE COOPER,  
PIANO, BEGINNERS' HARMONY.

(Bucknell School of Music; Prof. Cruthers, Philadelphia; Prof. Briggs, New England Conservatory.)

ARTHUR BOWES,  
PIPE ORGAN, PIANO, INTERPRETATION, ADVANCED HARMONY.  
(Carlisle Cathedral and Trinity College, London.)

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\* In military service.

## NAMES OF STUDENTS.

## GRADUATE STUDENTS.

NAME.	COURSE.	RESIDENCE.
CONSTANTINO FORTUNATO	NEGRO, <i>Violin, Piano.</i>	Lewisburg
RACHEL MARY REED,		Maplewood, N. J.
	<i>Organ, Piano, Voice, Theory.</i>	
ELLEN MAE SMITH,		Lewisburg
	<i>Piano, Organ, Voice, Theory.</i>	
EMMA ALICE STRINE,		Milton
	<i>Organ, Piano, Theory.</i>	

## FOURTH YEAR.

HARRY ANDREWS,		Milton
	<i>Voice.</i>	
LEO BALESTRERI,		Milton
	<i>Voice.</i>	
DEWITT KIEFFER BOTTS,		Milton
	<i>Piano.</i>	
MARY ELIZABETH BOYER,		Sunbury
	<i>Piano, Theory.</i>	
MARY EVELYN BRIGHT,		Rebersburg
	<i>Voice.</i>	
ELSIE BERYL BUCKLEY,		Port Alleghany
	<i>Supervisor, Piano, Organ, Voice, Theory.</i>	
DERUA BRITTAIN CATHRALL,		West Pittston
	<i>Piano, Organ, Theory.</i>	
THELMA CORREY,		Milton
	<i>Voice.</i>	
ALDEN EUGENE DAVIS,		Dickson City
	<i>Voice.</i>	
ERROL HUNT DERBY,		Scranton
	<i>Violin.</i>	
RAYMOND FASOLD,		Sunbury
	<i>Voice.</i>	
FANNIE EMMALINE FISHER,		Lewisburg
	<i>Piano, Theory.</i>	
HELEN GERTRUDE FISHER,		Lewisburg
	<i>Piano, Theory.</i>	

NAME.	COURSE.	RESIDENCE.
GLADYS GRACE HACKENBURG,	<i>Piano, Voice, Theory.</i>	Rebersburg
THOMAS JACOB HEIM,	<i>Voice.</i>	Williamsport
ALICE NORRIS HEINEN,	<i>Voice.</i>	Milton
HELEN ROBERTA HOFFA,	<i>Piano.</i>	Lewisburg
RUTH ARLENE HOLDEN,	<i>Supervisor, Organ, Voice, Theory.</i>	Port Allegany
CARRIE LANTZ,	<i>Voice.</i>	Sunbury
RAYMOND PLANK LEWIS,	<i>Violin.</i>	Lewisburg
FLORENCE MALLORY,	<i>Voice.</i>	Milton
ELLEN ELIZABETH PETERSON,	<i>Supervisor, Piano, Organ, Voice, Theory.</i>	Ralston
MARY PAULINE SCHENCK,	<i>Voice.</i>	Morristown, N. J.
AMY PEARL SILL,	<i>Supervisor, Piano, Voice, Theory.</i>	Franklinville, N. Y.
MARY DOROTHEA TOOLEY,	<i>Voice.</i>	Danville
THIRD YEAR.		
EDNA MARY BAKER,	<i>Piano, Theory.</i>	Lewisburg
MARY BALESTRERI,	<i>Piano.</i>	Milton
SARAH MUSSER BERNHARDT,	<i>Voice.</i>	Lewisburg
LYDIA COENE,	<i>Violin.</i>	Paterson, N. J.
ELTHERA GLENN CORSON,	<i>Voice.</i>	Bridgeton, N. J.
HERBERT SETLEY DELONG,	<i>Violin.</i>	Watsontown
MERRILL BROWN DEWIRE,	<i>Voice.</i>	Lewisburg
HOMER TITUS EATON,	<i>Voice.</i>	Erie

NAME.	COURSE.	RESIDENCE.
FRIEDA EVA EBNER,		Glassboro, N. J.
ESTHER MARIE FLEMING,	<i>Piano, Theory.</i>	
	<i>Violin.</i>	Paterson, N. J.
GRACE RAU FOLLMER,		Milton
	<i>Voice.</i>	
LOUISE KURTZ GLOVER,		Mifflinburg
	<i>Piano.</i>	
JOSEPHINE IVA GREEN,		Olean, N. Y.
	<i>Supervisor, Piano, Voice, Violin, Theory.</i>	
MARY ELLEN HARRIS,		Lewisburg
	<i>Voice.</i>	
JAMES RUSSELL HERMAN,		Edwardsville
	<i>Violin.</i>	
ETHEL REBECCA HEWITT,		Mifflinburg
	<i>Voice.</i>	
LEONA ELLEN KEYSER,		Sunbury
	<i>Violin.</i>	
MARY LEWIS,		Lewisburg
	<i>Voice, Theory.</i>	
MITTIE DEBORAH MARK,		Lewisburg
	<i>Supervisor, Piano, Voice, Theory.</i>	
HAROLD PHILLIPS OAKLEY,		Milford, N. Y.
	<i>Piano.</i>	
BERTHA ELIZABETH ROUSH,		Sunbury
	<i>Piano, Theory.</i>	
AMORITA MURIEL SESINGER,		Pitman, N. J.
	<i>Piano.</i>	
HOWARD SLAYMAN,		Mifflinburg
	<i>Voice.</i>	
GERTRUDE SMITH,		Sunbury
	<i>Voice.</i>	
LOIS MYRTELLA SMITH,		Milton
	<i>Piano, Theory.</i>	
ESTHER GENEVA SNYDER,		Elders Ridge
	<i>Piano, Voice, Theory.</i>	
SUZANNA E. STATLER,		Johnstown
	<i>Voice.</i>	
WILLIAM C. A. WILLMAN,		Mt. Carmel
	<i>Voice.</i>	



## SECOND YEAR.

NAME.	COURSE.	RESIDENCE.
PAULA ANNAN,	<i>Piano, Voice, Theory.</i>	Emmitsburg, Md.
NORMAN ROY APPLETON,	<i>Voice, Violin.</i>	Philadelphia
ELEANOR BALLENTINE,	<i>Piano.</i>	Lewisburg
JENNIE BANKS,	<i>Piano.</i>	Lewisburg
LAMBERT TEUFEL BOTTS,	<i>Violin.</i>	Milton
HELEN GRACE BRUMGARD,	<i>Piano.</i>	Mifflinburg
THELMA FASOLD,	<i>Piano.</i>	Sunbury
THERON FASOLD,	<i>Piano.</i>	Sunbury
EMMA MAGDALENA FUHRER,	<i>Piano.</i>	Scranton
ISABEL GREEN,	<i>Voice.</i>	Olean, N. Y.
MILDRED IRENE HALE,	<i>Voice.</i>	Milton
MADGE ODEAN HEIMBACH,	<i>Piano.</i>	Lewisburg
HILDA IRENE HEROLD,	<i>Piano, Voice, Theory.</i>	Montgomery
SARAH HESTER,	<i>Voice.</i>	Milton
ELOISE ERNESTINE HILL,	<i>Violin.</i>	Williamsport
BLANCHE KENNELLY,	<i>Voice.</i>	Milton
JENNIE LEIBY,	<i>Piano.</i>	Lewisburg
ANNA GERTRUDE LEISER,	<i>Piano.</i>	Sunbury
ROSSANNA LEISER,	<i>Piano.</i>	Sunbury
MILDRED ISABELLE LESHER,	<i>Piano.</i>	Lewisburg

NAME.	COURSE.	RESIDENCE.
BLANCHE MARTIN,		Milton
	<i>Piano.</i>	
ESTELLE FERN MCNEAL,		Nescopeck
	<i>Piano.</i>	
WILLIAM MOYER,		Lewisburg
	<i>Voice.</i>	
HELEN LOUISE MOYLE,		Plymouth
	<i>Piano.</i>	
DOROTHY CAROLINE OWEN,		Hazleton
	<i>Voice.</i>	
GRACE POUST,		Muncy
	<i>Piano.</i>	
ELSIE SCHUYLER,		Lewisburg
	<i>Voice.</i>	
VIOLA MAE SHOWERS,		New Columbia
	<i>Voice, Piano, Theory.</i>	
ERMA ELIZABETH SMITH,		Milton
	<i>Piano.</i>	
HARLAND SMITH,		Sunbury
	<i>Piano.</i>	
HELEN LUMBARD SMITH,		Sunbury
	<i>Piano.</i>	
ROY B. STINE,		Tyrone
	<i>Violin.</i>	
GERTRUDE STEVENS,		Lansdowne
	<i>Voice.</i>	
MARGUERITE EDNA STEVENSON,		Berwick
	<i>Piano, Theory.</i>	
SARAH LILLIAN STRAW,		Lewisburg
	<i>Piano.</i>	
MARGARET HELEN TRUMP,		Derry
	<i>Piano.</i>	
RAYMOND WILSON,		Carbondale
	<i>Violin.</i>	
	FIRST YEAR.	
MATILDA ELIZA BELL,		New Millport
	<i>Piano.</i>	
EVELYN BURPEE,		Lewisburg
	<i>Piano.</i>	
STANLEY BURPEE,		Lewisburg
	<i>Piano.</i>	

NAME.	COURSE.	RESIDENCE.
HILDA ANETTE GETZ,	<i>Piano.</i>	Sunbury
SARAH GIRTON,	<i>Voice.</i>	Milton
MARY KATHERINE GLOVER,	<i>Violin.</i>	Vicksburg
META FRANCES HALDEMAN,	<i>Piano.</i>	Ivyland
MARSHALL IRVIN,	<i>Piano.</i>	Lewisburg
MILDRED ELSIE LAMINE,	<i>Piano.</i>	Milton
LAWRENCE W. LAWSON,	<i>Voice.</i>	Latrobe
HELEN ESTHER MACFARLAND,	<i>Violin.</i>	Watsontown
CHARLES ALBERT MCDOWELL,	<i>Voice.</i>	Latrobe
RACHEL MILLER,	<i>Voice.</i>	Milton
REBECCA PEARL MILLIKEN,	<i>Piano.</i>	Lewisburg
HENRY LEWIS DAVIS MOORE,	<i>Voice.</i>	Bridgeton, N. J.
MARGARET SIBLE MOORE,	<i>Piano.</i>	Milton
ELWOOD MYLLER,	<i>Voice.</i>	Milton
HAROLD GOLD PAINTER,	<i>Violin.</i>	Lewisburg
JOY TILLMAN PROSS,	<i>Piano.</i>	Lewisburg
LOUISE WILHELMINA REINHARDT,	<i>Voice.</i>	Milton
PHCEBE MARGARET REINHARDT,	<i>Voice.</i>	Milton
MILDRED SHULTZ,	<i>Piano.</i>	New Columbia
CHARLOTTE WALTON SIPLEY,	<i>Violin.</i>	Lewisburg
WILLIAM STINE,	<i>Voice.</i>	Lewisburg

NAME.	COURSE.	RESIDENCE.
CHARLES STRAUB,		Mifflinburg
	<i>Voice.</i>	
FRANCES EDSALL VANCLEAF,		Stockholm, N. J.
	<i>Violin.</i>	
CHARLOTTE VOLKMAR,		Williamsport
	<i>Piano.</i>	
JESSIE WELLIVER,		Milton
	<i>Piano.</i>	
THERON WINTER,		Lewisburg
	<i>Violin.</i>	

## SUMMARY.

Piano. ....	62
Pipe Organ .....	7
Violin .....	21
Voice .....	55
Supervisor's Course .....	8
History of Music.....	10
Beginners' Harmony .....	20
Advanced Harmony .....	12
Sight Singing .....	20
Musical Appreciation .....	11
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Total Number of Lessons.....	375
Pupils .....	122

## GRADUATES, CLASS OF 1918.

NAME.	COURSE.	RESIDENCE.
MARY CATHERINE ARBOGAST,		Lewisburg
	<i>Voice, Theory.</i>	
FLORENCE MAY BUFFINGTON,		Shamokin
	<i>Voice.</i>	
FLORENCE EDNA CRABB,		Winfield
	<i>Piano, Theory.</i>	
HAZEL LILLIAN HAGERMAN,		Malaga, N. J.
	<i>Supervisor, Piano, Organ, Theory.</i>	
HELEN WITHERSPOON HAMOR,		Milton
	<i>Organ, Theory.</i>	
BEULAH MAE HUMMELL,		Lewisburg
	<i>Supervisor, Voice, Theory.</i>	

NAME.	COURSE.	RESIDENCE.
MARIE AILEEN LARSON,	<i>Voice, Theory.</i>	Kane
LEAH ELIZABETH LINDIG,	<i>Piano, Theory.</i>	Lewisburg
EMILY LEVIS MACKEY,	<i>Supervisor, Piano, Theory.</i>	Oxford
ROSE MAHER,	<i>Supervisor, Voice, Theory.</i>	Port Allegany
FLORINE MICHAEL,	<i>Voice, Theory.</i>	Laceyville
EMMA MARY MOYER,	<i>Supervisor, Voice, Theory.</i>	Rebersburg
EMILY GROFF PIATT,	<i>Piano, Theory.</i>	Montgomery
KATHERINE PAULINE REED,	<i>Supervisor, Voice, Theory.</i>	Sunbury
RACHAEL MARY REED,	<i>Organ, Theory.</i>	Westfield, N. J.
ETHEL RUTH REMALY,	<i>Piano, Theory.</i>	Mazeppa
HELEN SHEPHERD RUGGLES,	<i>Supervisor, Voice, Theory.</i>	Athens
HAZEL MAE SMITH,	<i>Voice.</i>	Milton
ELLEN MAE SMITH,	<i>Piano, Theory.</i>	Lewisburg
EMMA ALICE STRINE,	<i>Organ, Piano, Theory.</i>	Milton
OLIVE MARGARET THOMPSON,	<i>Voice, Theory.</i>	Mifflinburg

## HISTORICAL.

Music was first taught at Bucknell University in 1853 by Melville Malcolm under the supervision of the Seminary. Various teachers had charge until 1858, when Monsieur Theodore P. Held, a French artist, took charge with one assistant, and in 1864 he was given a second assistant. In 1865 Monsieur Held's position became vacant, but he again resumed his work in 1866. In 1867 Alexander M. Loos was made Professor of Music. In 1869 Hermann F. Eberhardt took up the duties of Professor of Music and by 1870 there were sixty

students enrolled in the Music Department. In 1871 a vocal teacher was added to the music faculty. In 1888 Professor Elysée Aviragnet, M.A., took charge of the Music Department. In 1892 Professor Aviragnet received the degree of Doctor of Music, after which the Music Department was known as the Bucknell University School of Music, one of the distinct schools of the University, which are one corporation and have one President, who has general charge. Since 1903 Paul Stolz became actively associated with Dr. Aviragnet and his work in the School of Music, became his assistant, later Assistant Director, and at Dr. Aviragnet's death in 1908, his successor as Director of the School of Music. In 1918 the music faculty consisted of eight teachers, three in piano, three in voice, one in violin, and one in pipe organ with an attendance of one hundred and twenty-two pupils.



## COURSES OF STUDY.

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### INSTRUMENTAL MUSIC.

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#### COURSE FOR THE PIANO-FORTE OF FOUR YEARS FOR GRADUATION.

The pupil is required to pursue the most thoroughly approved modern system of technical training. After the first rudiments have been mastered, the Course of instruction leads to the practice of *études*, designed to unite with purely technical drill the requirements of artistic style and expression.

#### COURSE IN PIANO.

##### FIRST YEAR.

Musical Exercises and Gymnastics to prepare the hands for playing; Gurlitt, *Technic and Melody*, Book I; Kohler, *Practical Method*; Lebert and Stark, *Instruction Book*, Part I; Loeschorn, Op. 84 and 65; Kohler, Op. 157; Duvernoy *School of Mechanism*, Op. 120; *Études* by Biehl, Lemoine, LeCouppéy, Bertina and Czerny; introductory technical work; Sonatina, Kuhlau, Clementi, Schytte; pieces by Behr, Bohm, Lange, Lichner and others.

##### SECOND YEAR.

Heller, *Studies*, Op. 45, 46, and 47; Loeschorn, Op. 66; Czerny, Op. 299; Bernes, Op. 61; Easier Mozart, Haydn, Beethoven, Sonatas; Little Preludes by Bach; Bach Inventions, Scales, Arpeggios, and other technical work continued; Salon pieces by Bendel, Kullak, Merkel, Nevin, and other composers; preparatory octave and chord work.

##### THIRD YEAR.

Czerny, Op. 740; Cramer, 50 *Studies*; Clementi *Gradus ad Parnassum*; Moscheles, Op. 70; Bach Suites, Handel Suites, Scarlatti pieces, Beethoven Sonatas; introductory Chopin work; compositions by Grieg, Godard, MacDowell, Moszkowski, and others; continued octave and chord work.

##### FOURTH YEAR.

Bach Preludes and Fugues; Italian Concerto; Chromatic Fan-

tasy and Fugue; Kullak Octave Studies; Selected Chopin Études; Liszt Studies; Beethoven Sonatas, Op. 53 and 57; other compositions by Chopin, Liszt, Schumann, and selected works by Tausig, Moszkowski, Saint-Saens, Brahms, and Rubinstein.

The outline is necessarily quite elastic and will adjust itself to the individual ability, requirements, and purposes of each students.

### COURSE IN PIPE ORGAN.

The study of pipe organ is generally pursued by music students having at least Junior standing in piano. The Course is designed to provide a thorough education as choirmaster and organist, and provides for a training in all that pertains to intelligent performance of church music, voluntaries, and the art of accompaniment; also a systematic drill in technics, registration, and improvisation.

A new pipe organ for practice was installed during the summer of 1916.

#### FIRST YEAR.

Stainer's Organ Method. Schneider's Organ Studies. Easy Hymn Tunes. Registration. Sight Reading. Easy pieces by Batiste, Flagler, Lemaigre, etc.

#### SECOND YEAR.

Dudley Buck's Short Preludes and Fugues, and Pedal Phrasing. Bach Chorales. Difficult hymn tunes. Organ solos of various styles by Rheinberg, DuBois, etc.

#### THIRD YEAR.

Sonatas by Merkel, Bach, and Mendelssohn. Preludes, Toccatas, Fugues. Quartet and chorus accompaniment. Selected solos by Guil-mant, Malling, etc.

#### FOURTH YEAR.

*Each Senior Must Register for Full Course.*

Sonatas by Guilmant, Rebuke. Symphonies by Widor. Bach's Advanced Works. Chanting and solo accompaniment. Improvisation. Selected solos for concert use, by Franck, Widor, Lemare, Hollins, etc. Voice (three terms).

It is very essential that an organist and choirmaster should understand the various voices he is to train, and for this reason we consider the voice requirement indispensable in the Organ Course.

A minor Course in Organ Construction will be required of graduate students in addition to the following theoretical courses:

Solfeggio and Dictation (three terms).

Harmony (six terms).

Harmonic Analysis (two terms).

Counterpoint and Fugue (three terms).

History and Theory (three terms).

In order to give organ students a good presence in public appearance, all organ students will be required to appear in public and semi-public recitals once each month.

### COURSE IN VIOLIN.

In the Violin Course, special attention is given to correct bowing, ear training and interpretation, a thorough acquisition, technically, and the study of a repertoire; with a few additions or changes to suit the individual requirements of the student, the general outline of the Course is as follows:

#### FIRST YEAR.

Methods of Schubert, Wohlfart, Spohr, etc. Scales and bowing exercises to promote beauty of intonation. Easy pieces.

#### SECOND YEAR.

Schools by De Beriot, Mazas, and Kayser. First ten studies of Kreutzer.

#### THIRD YEAR.

Concertos by Viotti. Sonatas by Gade, Grieg and others. Études by Kreutzer, Fiorillo, and Casorti.

#### FOURTH YEAR.

Rode Caprices and Concertos. Mendelssohn and Mozart Concertos. Solos by the best composers for the violin are used throughout the Course to develop style and phrasing.

Opportunity is given for ensemble playing to those sufficiently advanced. One year of pianoforte study is required.

Theoretical courses required for graduation:

Solfeggio and Dictation (three terms).

Harmony and Analysis (six terms).

Counterpoint and Fugue (three terms).

History and Theory (three terms).

### COURSE IN VIOLONCELLO.

#### FIRST YEAR.

Technical exercises. Major scales in two octaves. "Method Practique," by S. Lee. Studies by Dotzauer. Easy pieces.

## SECOND YEAR.

Technical exercises by Cossmann. Scales in three and four octaves. Studies by Lee and Franchomme. Concertinos and pieces by Romberg.

## THIRD YEAR.

Technical exercises by Fitzhagen. Advanced studies by Grutzmacher. Concertos.

## FOURTH YEAR.

Technical exercises by Klengel and Becker. Advanced studies. Sonatas by Bach.

Theoretical courses. See Violin Course.

## COURSE IN CONTRABASS.

## FIRST YEAR.

Warnecke's Method of Playing. Scales and finger exercises. Études.

## SECOND YEAR.

Vorzuegliche Uebungen, Hause's. Études. Overtures. Symphonies.

## THIRD YEAR.

Warnecke's Method. Advanced Études. Beethoven Symphonies.

## FOURTH YEAR.

Warnecke's Method. Part 2. Wagner Operas. Solos by Sturm and Laska.

Theoretical courses. See Violin Course.

## COURSE FOR THE VIOLA.

Bruni's Methods and Studies by Campagnoli.

## VOICE CULTURE.

Careful instruction is given in the use of the voice and the correct manner in producing purity of tone—the equalization of tone throughout the whole compass of the voice, and gain for it flexibility, fullness and durability.

TONE WORK. Physiology, breath control, voice placing.

ENUNCIATION. Attack, release, vibration, legato. (Vowels, diphthongs, and consonants.)

SIGHT SINGING. Staff notation, rhythm, ear training, harmony.

REPERTOIRE. Interpretation and classification.

## SONG, ORATORIO, AND OPERA COACHING.

Pupils desiring to acquire the true rendition in oratorio solo

singing, as exemplified in the interpretation of the great singers and conductors, can secure the necessary knowledge and thus equip themselves for public performances.

Ensemble Singing, Duets, Trios, Quartets, and Choruses from Operas and Oratorios.

Studies from the works of old masters such as Palestrina, Orlando di Lasso, Gabrieli, Leo Hassler, etc.

Production of various opera scenes.

#### FIRST YEAR.

Breath Control. First Vocalises of Concone. Diction. Slow Easy Songs. Solfeggios.

#### SECOND YEAR.

Vocalises by Concone, Marchesi, Lamperti, and others. Diction. More advanced English songs. Simple Recitative. Simple Arias. Solfeggios. Piano (one lesson weekly). Chorus. Advanced Vocalises, Song Interpretations. Velocity.

#### THIRD YEAR.

Advanced Vocalises. Song Interpretation. Velocity. Coloratura singing begun. Difficult Recitatives. Elaborate Arias. Solfeggios Advanced. Chorus.

#### FOURTH YEAR.

Complete Oratorio Rôles. Complete Opera Rôles. Preparation of Concert Programs. Chorus.

Theoretical courses required for graduation. See Theory for Piano Course.

### TEACHERS' COURSE IN PUBLIC SCHOOL MUSIC.

This Course provides in a systematic manner the best teaching methods, together with a thorough drill in sight reading, ear training and harmony; also gives actual practice in conducting the classes. In most of the public schools the regular grade teachers instruct the pupils under the supervision of a supervisor trained for the work. The purpose of this department is training for such supervision; by instructing pupils how to teach others to teach sight singing.

Outline of music used in the four-year Supervisor's Course:

#### FIRST YEAR.

SIGHT SINGING. This Course is elementary. The student must possess a singing voice of acceptable quality. Proficiency in sight

singing is of great advantage to the student entering the Supervisor's Course.

To complete this course the student must use Latin syllables to sing at sight individually music suitable for the first four years in the public schools.

#### SECOND YEAR.

SIGHT SINGING. The student is required to sing at sight with and without syllables, music suitable for the first seven years in the public schools.

#### THIRD YEAR.

SIGHT SINGING. The student is required to sing at sight without accompaniment, reading words and music simultaneously, the music used in the upper grades of the public schools and in the high school.

#### FIRST YEAR.

DICTATION. (Sense of hearing based on the study of tone and rhythm.) The student gains the power to think tones and to sense rhythms and learns to recognize and write simple melodic phrases in all keys.

Oral and written dictation work of the first four years in public school music, and singing from memory all sequential studies is required.

#### SECOND YEAR.

DICTATION. Each student is required to complete the oral and written dictation, including all sequential studies.

#### THIRD YEAR.

DICTATION. This Course completes melodic dictation. Aural recognition of intervals and of chords in their fundamental and in their inverted positions in both major and minor tonalities is required in harmonic dictation.

#### FIRST AND SECOND YEARS.

MATERIALS AND METHODS. The study and demonstration of materials and methods for kindergarten and the first four grades in public school music is considered. Selection, presentation, interpretation of rote songs for the lower grades, and the different tonal and rhythmic problems are taken up.

#### THIRD YEAR.

MATERIALS AND METHODS. This Course is devoted to the teaching and supervising of music from fifth to eighth grades, inclusive.



## FOURTH YEAR.

MATERIALS AND METHODS. The topics for consideration are: School chorus, glee clubs, grading and classification.

ORCHESTRAL TECHNIQUE.

PRACTICE TEACHING.

Theoretical courses required for graduation:

Harmony and Analysis (six terms).

Counterpoint and Fugue (three terms).

History and Theory (three terms).

## HARMONY.

The fundamental principles of the theory of music are embodied in the study of harmony which treats of the different chords in their natural relations and combinations. The subdivisions of the subject are as follows: Intervals, or the measurement of the difference in pitch between one tone and another; triads, seventh, and ninth chords with their inversions and resolutions; chromatically altered chords; augmented chords; cadences; suspensions; passing and changing notes; organ point, modulation.

The work consists of written exercises on basses (both figured and unfigured) and the harmonization of given melodies in three and four voices. These are corrected by the instructor out of the classroom and subsequently discussed with the students individually. Many exercises are also worked out on the blackboard by the students.

Modern Harmony, by Foote and Spalding, is used as the basis of the instruction. The Treatises of Prout, of Chadwick, and of others are used as reference books, and supplementary illustrations and explanations are given in the classroom. The course is as follows:

## FALL TERM.

Musical Notation, formation of Scales, both Major and Minor, intervals, triads, and chord connection. Simple part writing from given basses and sopranos; the chords of the seventh, with exercises harmonizing in open and close positions.

## WINTER TERM.

Modulation. Transposition of various models in all keys. Harmonizing melodies which modulate.

## SPRING TERM

Chromatically altered chords, suspension, retardation, appoggiatura, passing tone, embellishment, pedal point.

No text book required the first term.

## THE ORCHESTRA.

## CLASSES FOR ALL ORCHESTRAL INSTRUMENTS.

Students who are sufficiently advanced in any of the above musical instruments will have opportunity of practice in string quartets, trios, concertos, and symphonies of Beethoven, Mozart, and Haydn.

## RECITALS.

Frequent recitals in the presence of the faculty and students of the School of Music and their friends are held to accustom students to playing in public, and for mutual improvement.

On the Friday evening prior to Commencement week a public recital of the School of Music is held in Bucknell Hall.

The public examination of those who desire certificates of proficiency is held in Bucknell Hall the Saturday afternoon before commencement. At this time each pupil plays or sings two pieces of high grade, and reads an essay on some subject connected with music.

## SPECIAL ADVANTAGES.

Artists' Recitals. The opportunity of hearing good music rendered by artists of superior ability, is very essential in connection with the classroom instruction. All students of the School of Music are urged to attend these concerts, as they are admitted without expense beyond the fee of two dollars, which is charged with the fall term bill. Since the concerts are educational in character, the fee charge should be regarded part of the tuition.

## TUITION.

Tuition is charged for instruction in music, per annum, as follows:

	<i>Full</i>	<i>Half</i>	<i>Quarter</i>
	<i>Course.</i>	<i>Course.</i>	<i>Course.</i>
Vocal .....	\$82.00	\$47.00	\$27.00
Piano or Organ.....	82.00	47.00	27.00
Violin .....	82.00	47.00	27.00
Supervisor's Course in Public School Music	82.00	47.00	27.00
Harmony, in private lessons.....	82.00	47.00	27.00
Harmony in Class.....	27.00	....	....
Guitar and Mandolin, in Class.....	22.00	....	....
Use of Instruments for Practice Two Hours			
Daily, per term.....	4.00	....	....
Use of Pipe Organ for Practice One Hour			
Daily, per term.....	6.00	....	....

Special individual instruction in music, per lesson, \$2.00.

Full course implies two one-hour lessons per week, and theory.

Half course implies two half-hour lessons per week, and theory.

Quarter course implies one-half hour lesson per week, and theory.

No reduction is made except in case of protracted illness.

Instruction in the orchestra and in harmony is free to pupils otherwise studying music.

Payment strictly in advance beginning each term.

#### RESIDENCE OF MUSIC PUPILS.

Pupils in music reside in the Women's College and are under the care of the Dean of the Department for Women. Students pursuing any of the Institute courses can also take studies in music. Those who wish to make music a specialty are recommended to take at least one study each term in Language or Literature.

The regular charges for pupils in music, residing in the Institute, including one literary subject per term, are \$285 per annum. This *does not* include charges for instruction in music, which are determined by the number of lessons taken per week.

#### GRADUATION IN MUSIC.

Students who complete any of the Courses in Music and pass the examination, receive a certificate of proficiency. Students will not be taken as Seniors in Music until they have passed an examination before a committee consisting of members of the faculty and other appointed judges. Besides the examination before the Committee for admission to the Senior Class, students will be required to pass a preliminary examination at the opening of the spring term, and a final examination before Commencement week. Students will not be admitted to the final examination unless they have passed the preliminary examination.

#### THE AVIRAGNET PRIZE.

Friends of the late Elysée Aviragnet have endowed a prize for excellence in Music. For 1918 this prize was given to Miss Hazel Hagerman.

#### THE DIRECTOR'S PRIZE.

The Director of the School of Music offers an annual prize for excellence in the Science of Music. For 1918 this prize was awarded to Miss Emma Moyer.

## VOICE PRIZE.

The Director, also, offers an annual prize for excellence in Voice. For 1918 this prize was awarded to Miss Beulah Hummel.

## GENERAL REGULATIONS.

Young ladies attending upon the School of Music are subject to the administration and other regulations enacted by the Board of Trustees for the government of students in the Women's College. Students of Music are also entitled to all the privileges of the Women's College.

## DEPARTMENT OF ELOCUTION.

---

MISS EDITH SCHILLINGER.

The aim of this department is the correct study of voice and body for the effective expression of thought and emotion. Special attention is given to voice culture, articulation, gesture, and interpretative reading.

Semi-monthly recitals afford opportunity for platform work.

Particular attention is given to curing persons of stammering and other defects in speech.

The interpretation and the delivery of classics have a large place in the Course.

Special courses are offered to students who wish work along special lines of expression.

The Elocution Department offers a two-years' course leading to a certificate. All applicants for the regular course must have the equivalent of a high school education.

### THE CONTEST IN ELOCUTION.

A contest in Elocution for the prize in that subject, open to all the members of the Department, takes place in Bucknell Hall on the second Saturday evening in the month of May.

### THE ELOCUTION PRIZE.

A prize in Elocution is offered to the student who shall give the best recitation at the Annual Contest.

For 1918 the prize was awarded to Margaret Brown.

## COURSE IN HOME ECONOMICS.

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### FACULTY.

---

ANNA ROBERTA CAREY, A.M.,  
PSYCHOLOGY AND HYGIENE.

ROSE ELIZABETH RAINEY (Drexel Institute),  
COOKING.

FLORENCE FOWLER.  
COOKING AND SEWING.

NELSON FITHIAN DAVIS, SC.D.,  
BIOLOGY AND BACTERIOLOGY.

WILLIAM HILLIARD SCHUYLER, CHEM.E.,  
CHEMISTRY.

WILLIAM GUNDY OWENS, A.M.,  
CHEMISTRY OF FOODS.

EDITH SCHILLINGER,  
PHYSICAL EDUCATION.

Students in Home Economics are of College rank and their names are given in the catalog of College students.

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The Course in Home Economics offers instruction in both theory and practice in the subjects fundamental to a competent knowledge of Home Economics.

Based on the principles of Chemistry, Physiology, and Hygiene, Biology, Bacteriology, and Psychology, the knowledge of cookery, dietetics, home-sanitation, household economy, and home decoration, gained by the diligent student will meet the demands of successful practice in home, school, or institution. To prosecute the work of this Course effectively, the student must have the equivalent of the usual four-year High School Course.



This Course is intended to fit young women to teach Home Economics in High Schools and for the duties of the household. Further information can be obtained by addressing the Dean of the Department of Women.

The Course in General Cookery includes instruction in the care of the kitchen and all its appointments; the principles of cookery, as applied to baking, boiling, stewing, broiling, roasting, steaming; and practical demonstration of these principles in the cooking of meats, vegetables, eggs, pastries, cake, puddings, sauces, salads, and salad dressings and desserts of various kinds.

A complete laboratory has recently been fitted up at large expense for the use of the Home Economics Department, fully equipped for practical instruction in the several lines offered.

### PSYCHOLOGY.

Psychology is taught by text-book and informal lectures. The relation of Psychology to education is made a special feature of the Course.

(a) The first term is given to Descriptive Psychology, in which the facts and laws of mind are carefully studied.

(b) The second term is devoted to Comparative Psychology, a careful study being made of the development of the child mind, as well as of the appearance of mind in the lower animals.

(c) A Course is also given in Child Psychology, showing the relation of mind and body, and how the ideal of a sound mind in a sound body may be attained.

Special attention is given to problems arising out of family and social relations.

The Courses in Psychology are open as electives to College women.

### PHYSIOLOGY.

The Course in Physiology, with special reference to Home Economics, extends through the Senior year of the General Course and is elective also to College women. First is taken up General Physiology, including the plan of the human organism, the chemistry of the tissues, digestion, circulation, respiration, and excretion, the nervous system, and special senses. Then the Course takes up the subjects of Personal Hygiene and Emergencies; such as physical training, its value and limitations, clothing, foods, care of the body, effect of narcotics, and so on.

### CHEMISTRY.

Descriptive Chemistry is taught by text-book, lectures, and experiments. The object of the Course is to give the student a general

knowledge of the common elements, their sources, uses, compounds, and behavior toward other elements and compounds, and to drill the student.

1. **Descriptive Chemistry.** Text-book, lectures, and laboratory experiments. The properties, preparation, history, and uses of the non-metallic elements and their compounds. First term.

2. **Descriptive Chemistry.** Text-book, lectures, and laboratory experiments. The properties, preparation, history, and uses of the metallic elements and their compounds. Second Term.

3. **Qualitative Analysis.** In the first part of the term chemical reactions are studied in the laboratory, classroom, and text-book, after which fifty compounds, mixtures, and industrial products are determined. Each student reports individually and is questioned on the methods of determination. Twelve hours laboratory work a week required. Third term, prerequisite, Courses 1 and 2.

4. **Chemistry of Foods.** Food analysis is practiced in the laboratory, six hours a week. Full College Course. Prerequisites, Courses 1, 2, and 3.

## UNIVERSITY CALENDAR

1919.

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 SPRING RECESS.

Second Term Ends, .....Wednesday, March 19  
 Third Term Begins,.....Wednesday, March 26  
 Sermon before the Christian Association,..... Sunday, April 6  
 Contest in Elocution,.....Saturday, May 3  
 Exhibition of the Junior Class, College,.....Friday, May 9  
 Examinations,.....Tuesday to Friday, June 17  
 Exhibition, School of Music,.....Friday, June 20  
 Baccalaureate Sermon, .....Sunday, June 22  
 Examinations for Admission to College,.....Monday, June 23  
 Meeting of the Alumnae,.....Monday, June 23  
 Annual Meeting of the Trustees,.....Monday, June 23  
 Annual Meeting of the Alumni,.....Monday, June 23  
 Graduating Exercises of School of Music,.....Monday, June 23  
 Oration before the Alumni,.....Monday, June 23  
 ANNUAL COMMENCEMENT, the 69th,.....Tuesday, June 24  
 Fall Examinations for Admission to College,

.....Wednesday, September 17  
 First Term Begins,.....Thursday, September 18  
 Election of Class Officers, 3 p. m.,.....Friday, September 19  
 Reception by Christian Association,.....Saturday, September 20  
 Matriculation, .....Tuesday, November 25  
 First Term Ends,.....Wednesday, December 17

1920.

Second Term Begins,.....Tuesday, January 6  
 Second Term Ends,.....Thursday, March 18  
 Third Term Begins,.....Thursday, March 25

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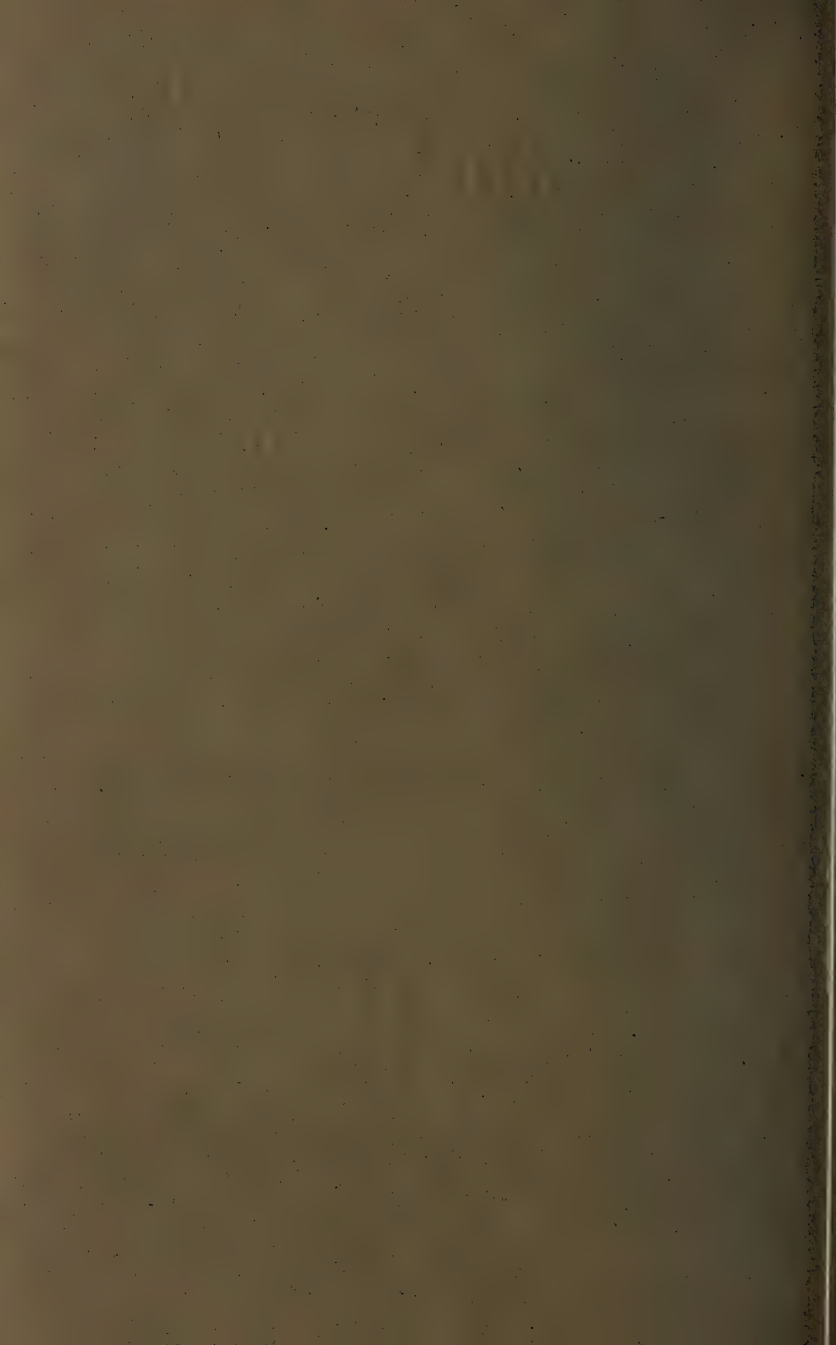
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# Bucknell University Bulletin



Annual Catalogue

1919-1920



CATALOGUE  
OF  
BUCKNELL UNIVERSITY



SEVENTIETH YEAR

1919---1920

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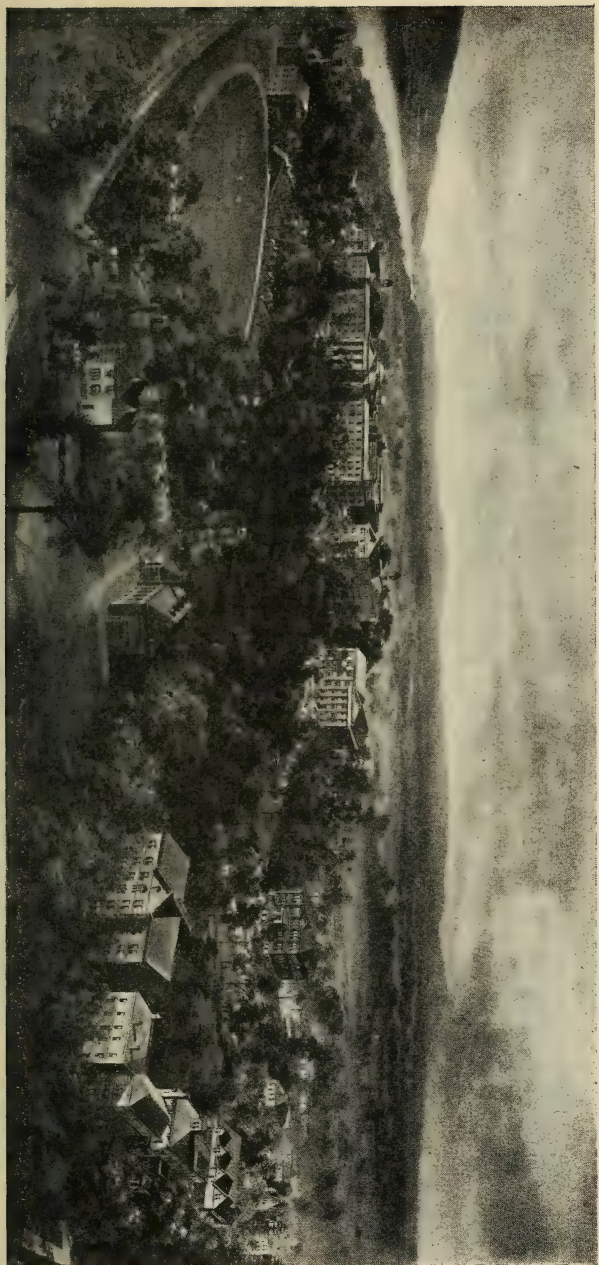
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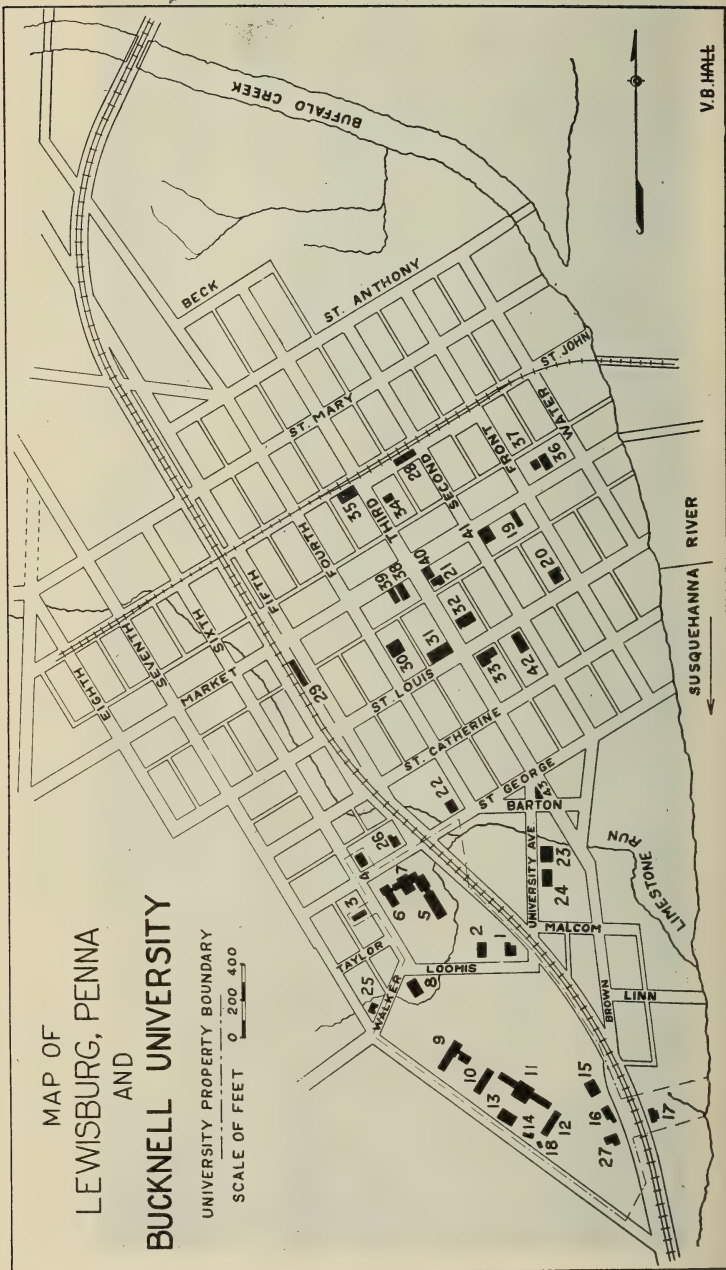




# MAP OF LEWISBURG, PENNA AND BUCKNELL UNIVERSITY

UNIVERSITY PROPERTY BOUNDARY

SCALE OF FEET 0 200 400



# KEY TO MAP OF LEWISBURG

## University Buildings

1. The President's Residence

2. Bucknell Hall

3. Bower House

4. Wolfe House

5. New Residence Hall

6. Bucknell Cottage

7. Women's College

8. Chemical Laboratory

9. Biological Laboratory

10. West College

11. Main Building

12. East College

13. Carnegie Library

14. Observatory

15. Tustin Gymnasium

16. Power House

17. Foundry

18. College Inn

19. Delmar Inn

## Fraternities

20. Lambda Chi Alpha

21. Phi Kappa Psi

22. Sigma Alpha Epsilon

23. Kappa Sigma

24. Phi Gamma Delta

25. Sigma Chi

26. Delta Sigma

27. The Forum. (Gamma Lambda Sigma).

## Railway Stations

28. Pennsylvania R. R.

29. Reading R. R.

## Churches

30. Evangelical

31. Baptist

32. Methodist Episcopal

33. Lutheran

34. Christian

35. Reformed

36. Presbyterian

37. Himmelmreich Library

38. Post Office

39. Union National Bank

40. Lewisburg Trust and Safe Deposit Co.

41. Lewisburg National Bank

42. Court House

43. Soldiers and Sailors Monument.

# 1920-1921

## March

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
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28	29	30	31			

## April

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## May

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30	31					

## June

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27	28	29	30			

## July

S	M	T	W	T	F	S
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18	19	20	21	22	23	24
25	26	27	28	29	30	31

## August

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29	30	31				

## September

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## October

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31						

## November

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## May

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## June

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26	27	28	29	30		

Dates printed in bold-faced type are those upon which the College is in session.

## CALENDAR FOR 1920-1921

### 1920

March 18.....	Second Term Ends
March 25.....	Third Term Begins
June 13.....	Baccalaureate Sunday
June 15.....	Alumni Day
June 16.....	Annual Commencement
September 15.....	First Semester Begins
November 24-29.....	Thanksgiving Recess
December 22-January 5....	Christmas Recess

### 1921

January 31.....	First Semester Ends
February 1.....	Second Semester Begins
February 22.....	Holiday
March 23-30.....	Spring Recess
May 30.....	Holiday
June 10.....	Second Semester Ends
June 12.....	Baccalaureate Sunday
June 14.....	Alumni Day
June 15.....	Annual Commencement

Bucknell University is located at Lewisburg, Pennsylvania, on the Pennsylvania and Reading Railroads, about sixty miles north of Harrisburg. On the Pennsylvania Railroad passengers change cars at Montandon.

## CORPORATE RIGHTS

The University was incorporated with full university powers by the Legislature of Pennsylvania in an Act approved by the Governor on the fifth day of February, 1846. The management of the University is committed to a Board of Trustees that is self-perpetuating. The Charter provides: "That said trustees shall not for any cause, or under any pretext whatever encumber by mortgage, or otherwise, the real estate or any other property of said institution: That no religious sentiments are to be accounted as a disability to hinder the election of an individual to any office among the teachers of the institution, or to debar persons from admittance as students, in any department of the University".

## ORGANIZATION

The University is composed of the College and of the Department of Music.

## BENEFACTORS OF BUCKNELL UNIVERSITY

The total property of the Institution exceeds one million dollars. The productive endowment amounts to about five hundred and forty-four thousand dollars. All this property has been given by friends of education, numbering several thousand persons. Founders of the Institution, that is, Benefactors who have given ten thousand dollars or more have been: David Jayne, John Price Crozier, William Bucknell, Samuel Alrich Crozer, Harry Samuel Hopper, Harriet Bucknell Hopper, John D Rockefeller, Catharine A. Wentz, Charles Miller, John J. Carter, Henry Kirke Porter, David Porter Leas, Andrew Carnegie, Louise Bucknell Little, Joseph Kerr Weaver

Patrons (those who have given one thousand dollars or more, but less than ten thousand) have been: Charles F. Ab-

bott, Ralph A. Amerman, E. A. Armstrong, Francis W. Ayer, Benjamin Bear, William P. Beaver, Martin Bell, Emma W. Bucknell, Washington Butcher, Simon Cameron, Levi B. Christ, Elisha A. Coray, William J. Coxey, Nettie Dunham Crary, Samuel J. Creswell, George K. Crozer, J. Lewis Crozer, Mrs. J. Lewis Crozer, Robert H. Crozer, John C. Davis, Thomas Y. England, Isaac Ford, Mrs. Isaac Ford, Benjamin Gartside, Mary W. Getter, Thomas A. Gill, Leroy Gleason, Calvin Green, Benjamin Griffith, Calvin A. Hare, John H. Harris, George Hyde, James Irving, Israel James, E. C. Jayne, Adam Johnston, John D. Johnson, William W. Keen, William B. Leas, Alexander M. Lloyd, Justin R. Loomis, Freeman Loomis, William H. Ludwig, J. C. McKinney, S. E. McVitty, Joseph Meixell, George Barron Miller, Geroge F. Miller, James Moore, James Moore, Jr., H. J. Mulford, Jacob G. Neafie, Christian Overholt, A. C. Overholt, Maria Overholt, George Porter, Jacob Reese, A. J. Rowland, J. C. Sibley, George M. Spratt, Orlando W. Spratt, W. H. Starbuck, Amos B. Still, James B. Stephenson, John B. Stetson, James S. Swartz, Francis J. Torrance, Ernest L. Tustin, N. Stewart Wall, Charles S. Walton, Martha England Walton, Thomas Wattson, Samuel Wolf, Simon P. Wolverton, S. D. Young.

By act of the Board of Trustees, the names of Founders and Patrons will be recorded in the Annual Catalog of the University forever.

### A MOVEMENT TO INCREASE FUNDS

The Board of Trustees is engaged in a movement which is intended to add a million dollars to the endowment and to secure a half million for additional equipment.



## THE BOARD OF TRUSTEES

---

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OLIVER J. DECKER, A.B.

Williamsport

MILTON G. EVANS, D.D., LL.D.

Chester

JOHN H. HARRIS, Ph.D., LL.D.

Lewisburg

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Deland, Florida

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Lewisburg

JOSEPH K. WEAVER, A.M., M.D.

Norristown

CLARENCE A. Weymouth, Sc.B.

Philadelphia

S. LEWIS ZIEGLER, M.D., LL.D.

Philadelphia

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## MEETINGS OF THE BOARD

The annual meeting is held on Tuesday of Commencement Week at Lewisburg.

The semi-annual meeting is held on the third Friday in February in Philadelphia.

## COMMITTEES OF THE BOARD

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J. W. Davis	F. W. Padelford
M. G. Evans	Leroy Stephens
Lincoln Hulley	E. L. Tustin
E. W. Hunt, ex-officio	

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J. W. Davis	E. L. Tustin
H. D. Hopper	C. A. Weymouth
J. H. MacAlpine	J. K. Weaver
E. W. Hunt, ex-officio	

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### COMMITTEE ON BUILDINGS AND GROUNDS

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A. W. Johnson	S. L. Ziegler
E. W. Hunt, ex-officio	

---

### COMMITTEE ON PUBLICATIONS

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M. G. Evans	Roy Bostwick
E. W. Hunt, ex-officio	

**PRESIDENTS OF THE UNIVERSITY**

1846-1851 STEPHEN W. TAYLOR, LL.D.

1851-1857 HOWARD MALCOM, D.D., LL.D.

1858-1879 JUSTIN ROLPH LOOMIS, Ph.D., LL.D.

1879-1888 DAVID JAYNE HILL, LL.D.

1889-1919 JOHN HOWARD HARRIS, Ph.D., LL.D.

1919- EMORY WILLIAM HUNT, D.D., LL.D.

# BUILDINGS AND EQUIPMENT

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## THE MAIN COLLEGE

The Main College is situated on a hill one hundred feet above the Susquehanna River. It was erected in 1859. It was designed by Thomas U. Walter, LL.D., architect of the dome and wings of the Capitol at Washington, D. C. It is Grecian in style. The building has a facade of three hundred and twenty feet. The central portion is eighty feet square, and is strengthened in front by four massive columns. On the first floor are six recitation rooms. On the second floor are the Museum of Natural History and recitation rooms.

On the third floor is Commencement Hall, with a seating capacity of fifteen hundred.

The Wings on the eastern and western sides, respectively, of the Main Building, are each one hundred and twenty feet in length and four stories in height. They are used for dormitory rooms, recitation rooms, and offices. The dormitory rooms have been thoroughly modernized. The West Wing was erected in 1850; the East Wing in 1859.

## THE WEST COLLEGE

The West College was erected in 1900. It is four stories in height, and is built of brick trimmed with brownstone. It contains ninety-seven rooms. One of the rooms is a hall for the use of the Young Men's Christian Association; the others are used for dormitory rooms.

## THE EAST COLLEGE

The East College was erected in 1907. It is built of brick, trimmed with brownstone. The first story contains the Electrical Laboratory, the Physical Laboratory and reci-

tation rooms. The top floor is used for draughting rooms. The other four stories contain one hundred and twelve dormitory rooms.

### THE FIRST BUILDING

The First Building on College Hill was erected in 1846. It is fifty feet in width by eighty feet in length, and three stories in height. The building will be used as a Laboratory of Biology.

### BUCKNELL COTTAGE FOR MEN

The Bucknell Cottage for men was erected in 1889. It is contiguous to the First Building and is connected with it by a covered passageway. The building contains recitation rooms.

### BUCKNELL HALL

Bucknell Hall was erected in 1886. It is the Chapel of the College.

### THE CARNEGIE LIBRARY

The Carnegie Library was given by the Honorable Andrew Carnegie, D.C.L., in the year 1905. The building is sixty-four feet by ninety feet. It is built of brick, trimmed with brownstone. The center, thirty feet by ninety, is used as a reading room. At the height of sixteen feet there is a gallery extending around the room. The sides, each fifteen feet by ninety, are divided, on the first floor, into rooms for special collections and for offices. The second floor will be used for stack rooms. The building will accommodate about one hundred thousand volumes.

### THE OBSERVATORY

The Observatory was erected in 1887 and enlarged in 1905. It is designed for the use of students in Practical Astronomy. The equipment consists of a Clark Equatorial

Telescope of ten inches aperture and  $12\frac{1}{2}$  feet focal length, furnished with a position Micrometer and the usual accessories; a Spectroscope, with prism and grating by Brashear; a three-inch prismatic Transit, with a nine-wire movable Micrometer, a Fauth Chronograph with Bond Spring Governor; a Waldo Precision Clock for siderial time, with mercurial compensation, break circuiting apparatus; Daniell's battery and telegraph sounders; a Seth Thomas Clock for solar time; a Sextant; Celestial globes and maps, and standard works on Theoretical and Practical Astronomy.

### THE FOUNDRY

The Foundry was erected in 1915. It is built of brick and is fitted up with appliances requisite for the courses in molding and casting.

### HEATING AND LIGHTING PLANT

The Heating and Lighting Plant was erected in 1901. From this central plant all heat, light and power used by the University are obtained.

### THE PRESIDENT'S HOUSE

At the entrance to the Campus from University Avenue is located the President's house.

### THE GROFF HOUSE

The Groff house, with the adjoining land, formerly the property of Professor George G. Groff, is now the property of the University.

### THE TUSTIN GYMNASIUM

The Tustin Gymnasium was erected in 1890. The first story is built of stone and contains an office for the director, lockers, dressing rooms, and shower baths. The second story is built of brick, rising twenty-two feet from the main floor to the roof line. At the height of twelve feet a running-track gallery, six feet wide, surrounds the room.



## THE ATHLETIC FIELD

The Athletic Field is conveniently located at the foot of "College Hill". Around the space devoted to football and baseball, runs a quarter-mile track. Close to the track on the southern side is the Tustin Gymnasium, easily accessible to students and trainers.

## LABORATORIES

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### The Biological Laboratories

The Biological Laboratories are equipped with apparatus for carrying on the work in the Organic Sciences. Rooms have been equipped for the various courses and are well supplied with microscopes, microtomes, incubators, and the necessary reagents. The laboratories are also supplied with collecting apparatus, books of reference and other necessary appliances. New apparatus is added as occasion demands. The work in Zoology is illustrated by marine and fresh water forms, skeletons and mounted specimens. An anatomical museum of dissections has been built up in the last few years by the department of Zoology.

The Physiological Laboratory has recently been equipped with stimulating apparatus, Kymographs, heart and muscle levers, spirometers, pneumographs, ergographs and other apparatus suitable for a well-rounded laboratory course in beginning or advanced work.

Material for Human Anatomy is received from the State Anatomical Board, and each student has the opportunity to dissect the human body. The student in Microscopic Anatomy has a good supply of paraffin and celloidin blocks. The work is illustrated with microscopic slides, alcoholic material and French wax models. Each student must provide himself with dissecting instruments.

### The Electrical Laboratory

The Electrical Laboratory is located on the ground floor of East College and consists of the dynamo laboratory proper, and the instrument room for the safe keeping of portable and precision apparatus. The lecture and demonstration room adjoins the laboratory. These combined rooms furnish a total floor space of approximately 2,600 square feet and contain the apparatus for the laboratory work of the various courses in electrical engineering.

The direct current apparatus includes several direct current motor equipped generating sets; shunt, compound, and series motors with prony brake for testing purposes, and numerous other special devices for engineering and commercial tests. A 25 KW engine driven direct current generator is available for power plant efficiency tests and other experimental work. This apparatus is so chosen and erected as to make a detailed study complete and convenient.

The alternating current apparatus consists of various types of single phase, two phase, and three phase generators, single and polyphase induction motors, rotary converter, synchronous motors, and all necessary measuring instruments for performing engineering and commercial tests. Apparatus used is of frequencies varying from 25 cycles to 500 cycles.

The high tension equipment includes all the transformers, most of which are of the commercial type, others are special in their design and construction, and were built by the students in the department. The equipment also includes a Tesla coil with a thirty-six inch spark. This was built by the students of the department and operates with remarkable success. A complete oscillograph equipment with all the necessary accessories for the study of phase relations and higher harmonics in alternating current circuits forms a very valuable adjunct to the laboratory equipment.

The apparatus for the work in telegraphy and telephony comprises the essentials for simple telegraph circuits, duplex, diplex and quadruplex telegraphy including relays and repeaters. Simple magneto apparatus and several standard types of common battery apparatus are available for study in telephony.

A standard 1 KW radio set with 225-foot aerial, having a transmitting radius of 100 to 1,000 miles, depending upon conditions, furnishes an excellent equipment for students in this line of work. This is also equipped with various forms of receiving devices, and a wave meter for studying the wave lengths of distant stations.

### **The Chemical Laboratory**

The Chemical Laboratory is forty-three feet wide and eighty-six feet long, and has two stories and a basement. The first story contains a lecture room seating one hundred and twenty, and a freshman laboratory with ninety-six lockers accommodating forty-eight students at one time. It also has two stock rooms and a preparation room. The second story contains the library and balance room, offices, and the organic, quantitative, and physical chemistry laboratories. The basement, two-thirds above ground, contains three laboratories, supply rooms, dark room, lavatories, etc. All laboratories are supplied with hoods connected with a forced draft system actuated by an electric fan. There is ample equipment for the courses offered.

### **The Physical Laboratory**

The Physical Laboratory occupies the West side and, jointly with the department of Electrical Engineering, the South end of the East College. The three rooms on the West side are devoted chiefly to the study of mechanics, heat, light, and sound. They are fully equipped with permanent shelves and piers for carrying delicate apparatus,

and also many portable tables for general purposes. \* They are well lighted and supplied with water, gas, and electricity.

The equipment of the mechanics laboratory includes certified standards for measuring time, length and mass, and includes a seconds pendulum, a standard meter, cathetometers, traveling microscopes, precision balances and weights.

For the study of heat, the apparatus includes a complete set of mercury-in-glass thermometers, air thermometers, platinum resistance thermometers and auxiliary apparatus, thermo-couples, calorimeters for the determination of the heat value of solid, liquid and gaseous fuels. Several types of apparatus are available for the determination of the Mechanical Equivalent of heat.

The light laboratory is equipped with a large number of lenses and mirrors, spectrometers and spectroscopes, including one by Brashear fitted with a Rowland grating of 14,438 lines to the inch, and a constant deviation type by Hilger with photographic attachment. The equipment is complete for the qualitative study of the spectra of solids, liquids, and gases. Several optical benches are fitted with different types of photometers, and one precision photometer, carrying a Lummer-Brodhun screen, is mounted for the study of electric lamps.

The electrical equipment includes a large number of galvanometers of the various types; standard cells; standards of resistance, capacity and inductance; several types of the Wheatstone bridge; the Carey-Foster bridge; Kelvin Double bridge; Kelvin Balance; Siemens Dynamometer; a large number of the Weston portable voltmeters and ammeters; several types of potentiometers from American and foreign makers. In connection with the Electrical Engineering department, much apparatus is available which is described under the equipment of that laboratory.

## THE DRAWING ROOMS

The upper floor of the East College is devoted to Drawing. The rooms are lighted by sky-lights, and are fitted with locker and desk space for one hundred students. The center room is used for the Freshmen Drawing, the South room for Sophomore Drawing, the North room for Senior work in the Electrical Engineering course. The advanced drawing rooms for Civil and Mechanical Engineers are on the first floor of East College and the first floor of East Wing.

The drawing department is provided with a dark room for blue printing which has an electric printing machine, and is equipped for washing and drying the prints.

## THE MUSEUM

The University possesses good collections of illustrative material in Botany, Zoology, Histology, Geology and Mineralogy. Parts of these collections are kept in the laboratories and used in classroom work.

Since the erection of the Carnegie Library two large rooms in this building have been set aside as a Biological Museum. The collections of mounted birds and mammals have been transferred to these rooms. A special effort is being made to secure additions to this museum. Skeletons of vertebrates and skins of birds and mammals are especially desired.

The Geological Museum has been greatly enlarged during the past ten years, and many valuable specimens have been added.

During the past twenty-five years there has been built up a remarkable collection of Indian Relics. The collection includes some of the finest specimens from the Murray Nesbit collection, also the Gerner Collection from Muncy, Pa.,



besides thousands of specimens collected along the West Branch of the Susquehanna between Sunbury and Williamsport.

## THE LIBRARY

The general Library contains over forty thousand volumes, besides many thousand pamphlets. The Reading Room is connected with the Library and offers facilities for reading, studying, and writing. During term time both are open forenoon, afternoon and evening of each day, Sundays and holidays excepted. By the kindness of the Class of 1917, the Library is now well lighted with electricity. Students in all departments have free access to the shelves, and may draw two books at one time and retain them for two weeks, with the privilege of one renewal, if desired. On special designation by instructors, certain books in constant use by classes are excepted from general circulation, during specified times, or during the continuance of the study.

For greater convenience of instructors and students, collections of special technical books are also kept in the Laboratories of the Biological, Physical and Organic Sciences, in the Astronomical Observatory, and in specially designated classrooms.

## ART COLLECTION

An Art Collection of paintings, engravings, heliotypes, photographs, bronzes and casts of sculpture has been accumulating for some time, and is accommodated in the Carnegie Library. Recent valuable additions include the Loomis Collection, gathered in Italy by the late President Justin Rolph Loomis, LL.D., the gift of his children, Andrew Gregg Loomis, Esq., and Mrs. Carrie Loomis Owens.



## BUILDINGS OF THE WOMEN'S COLLEGE

The buildings and campus of this department are set apart for the use of women taking courses in the College and in the School of Music.

The Main Building was erected in 1857; the South Wing, in 1870. It contains an office for the Dean, a reception room, parlors, living-room, dining-hall, and dormitory rooms. On the third floor of this building is the Laboratory for the department of Home Economics.

The Bucknell Cottage was erected in 1889. It stands to the southwest of the Main Building, and is connected with it by an enclosed passageway. It is used as a dormitory for women.

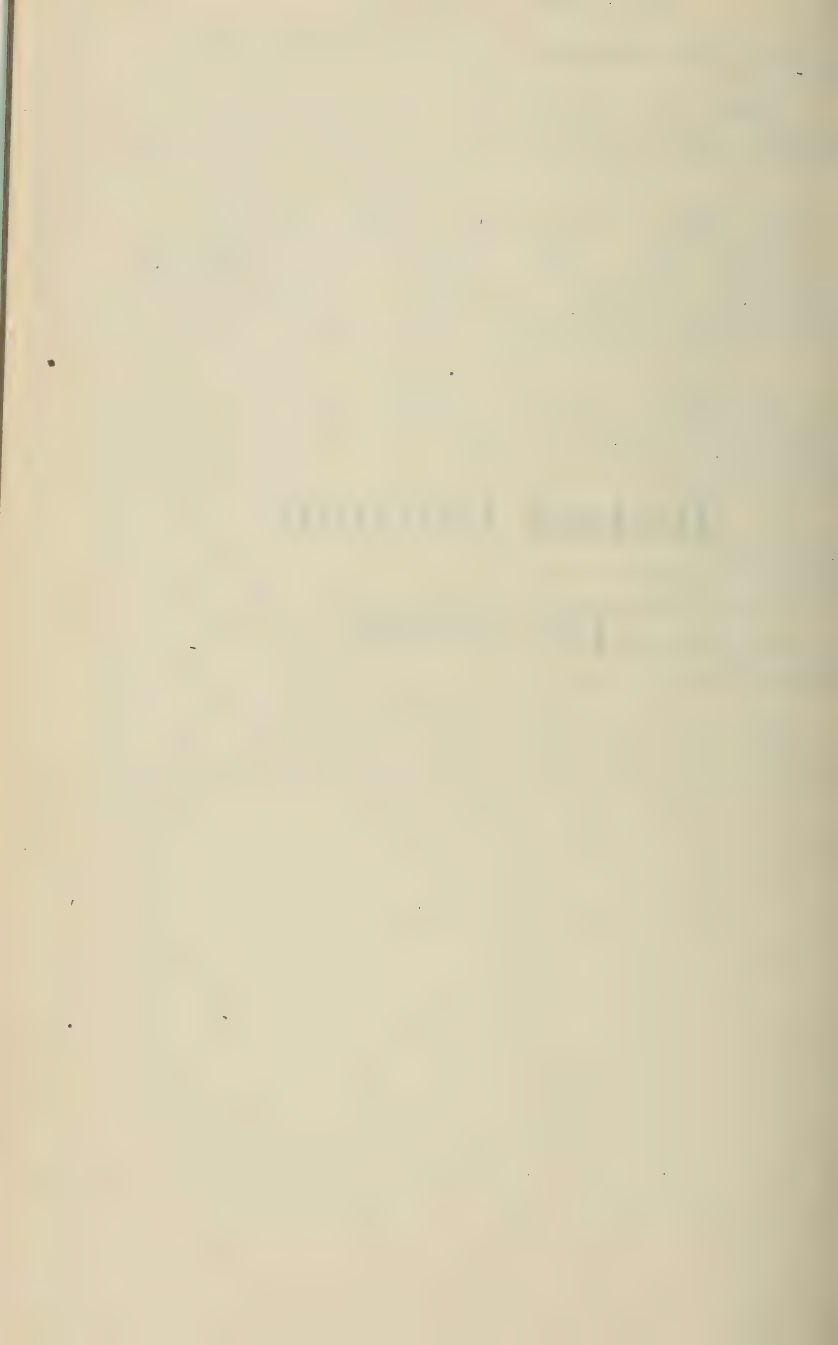
A new residence hall for women was erected in 1905. The gymnasium occupies the upper story of this building, and has a floor surface of over four thousand feet.

Two additional residence buildings adjoining the campus have recently been secured. Each of these accommodates about twenty college women.

The Campus of the Women's College is separated from the main College grounds by Loomis Street.

Bucknell University

The College



# THE COLLEGE

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## OFFICERS OF ADMINISTRATION

---

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JOHN HOWARD HARRIS, Ph.D., LL.D.

President Emeritus

LLEWELYN PHILLIPS, D.D.

Dean

ANNA ROBERTA CAREY, A.M.

Dean of Women

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BENJAMIN FRANKLIN THOMAS, A.M.

Registrar

MARY HELEN HUNT, A.B.

Recorder and Secretary to the President

FRANK EUGENE BURPEE, A.M.

Superintendent of Buildings and Grounds

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## FACULTY

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WILLIAM CYRUS BARTOL, A.M., Ph.D.

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Professor Emeritus of the Latin Language and Literature

WILLIAM GUNDY OWENS, A.M.

Professor of Chemistry

ENOCH PERRINE, A.M., Litt.D.

Professor of the English Language and Literature

THOMAS FRANKLIN HAMBLIN, AM., LL.D.

New Jersey Professor of the Greek Language and Literature

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Professor of Biology

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FRANK MORTON SIMPSON, Sc.M.

Professor of Physics

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LEO LAWRENCE ROCKWELL, A.M.

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Professor of Military Science and Tactics

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Assistant Professor of Chemistry

JOHN WILLIAM RICE, Sc.M.

Assistant Professor of Biology

GEORGE FRED RASSWEILER, A.M., B.O.

Assistant Professor of Public Speaking

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Instructor in Drawing

VORIS BLAINE HALL, B.S.

Instructor in Physics

MARGARET McCLURE, A.M.

Instructor in French

ROSE ELIZABETH RAINEY

Instructor in Dietetics

FLORENCE FOWLER

Instructor in Cooking and Sewing

VERA COBER ROCKWELL, A.B.

Instructor in Spanish

MARK MARGUERITE DOWNER, B.S.,

Instructor in Home Economics

ALBERT WILLIAM JOHNSON, A.M.

President Judge, Seventeenth Judicial District, Lecturer on Real and  
Personal Property

CLOYD NILLIS STEININGER, A.M.

Attorney-at-Law, Lecturer on Bills and Notes



## COMMITTEES OF THE FACULTY

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### COMMITTEE ON ADMISSION AND REGISTRATION

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Professors Colestock, Drum, Fries, Hamblin, Owens, Rockwell and  
Assistant Professor Everett

---

### COMMITTEE ON ATTENDANCE AND STANDING

Professor Simpson, Chairman

Professors Brown, Griffith, Heim, Lindemann, Martin, and Stewart

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### COMMITTEE ON CATALOGUE

Dean Phillips, Chairman

Dean Carey, Professors Ballentine, Rhodes, Simpson, and the Registrar

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### COMMITTEE ON CHAPEL

Assistant Professor Rice, Chairman

Professor Stolz, Assistant Professors Rassweiler, Schuyler, and  
Mr. Stetler

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and Perrine

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### COMMITTEE ON HONORARY DEGREES

Professor Perrine, Chairman

Dean Phillips, and Professor Martin

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### COMMITTEE ON LIBRARY

Professor Martin, Chairman

Professors Colestock, Perrine, Rhodes, and Stewart

## COMMITTEE ON STUDENT ACTIVITIES

Professor Drum, Chairman

Dean Carey, Professors Fries, Rhodes, Stewart, and Stolz

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## OTHER OFFICERS

NELSON FITHIAN DAVIS, Sc.D

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BENJAMIN W. GRIFFITH, A.M.

Graduate Manager of Athletics

MARY STONER GRETZINGER

Curator of the Library

WILLIAM EMMET MARTIN, A.M., L.H.D.

Librarian

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Director of Physical Education for Men

LEO L. ROCKWELL, A.M.,

Publicity Agent

BROMLEY SMITH, A.M.

Assistant Librarian

PAUL GEORGE STOLZ, A.M.

Director of the School of Music

VIRGINIA WALTON, A.B.

Director of Physical Education for Women

G. NORMAN WILKINSON, B.S.

Taxidermist

# ADMISSION TO THE COLLEGE

All applicants for admission should secure application blanks from the Registrar.

## Requirements

The requirement for admission is fifteen units of secondary school work. No student is admitted with less than thirteen units. A unit is a course of study pursued for a year, at least four periods a week of forty minutes each.

## Required Subjects

	Units
Algebra .....	1½
English .....	3
Geometry, Plane .....	1
Geometry, Solid .....	½

(For entrance to course in Biology,  
Chemical Engineering, Civil Engineering,  
Electrical Engineering and  
Mechanical Engineering).

Social Science, including History..	2
Natural Science .....	1

## Electives

French, at least .....	2
German, at least .....	2
Greek, at least .....	2
Latin, at least .....	2
Spanish, at least .....	2

The remaining four or four and one-half units may consist of further work in the above subjects or other subjects in the courses of study in a high school of the first class.

### **Certificates**

Applicants for admission who hold approved certificates which represent the required and elective subjects named above will be admitted without further examination.

### **Examination**

Applicants for admission who do not hold approved certificates are admitted by examination. This examination may be arranged for by writing to the President of the University.

### **Advanced Standing**

For advanced standing students must present evidence to the Committee on Attendance and Standing that they have covered in a satisfactory manner both the preparatory work for entrance to college and the subjects previously pursued by the classes they propose to enter. Students from other colleges must present also evidence of honorable dismissal. No student is admitted to the College as a candidate for a degree in the undergraduate courses after the beginning of the Senior Year.

# GRADUATION FROM THE COLLEGE

## Degrees

The college offers courses leading to the degrees of Bachelor of Arts and Bachelor of Science.

### Requirements for the Degree of Bachelor of Arts

#### I. Prescribed Work

Candidates for the degree of Bachelor of Arts must pursue the following courses:

	Credit Hours
English .....	9
English Literature .....	3
Foreign Language .....	6
History .....	6
Mathematics .....	8
Philosophy .....	9
Physical Education .....	4
Public Speaking .....	2
Science .....	10
Fundamentals .....	1

By an hour is meant one recitation a week throughout the semester; two or three hours of laboratory work a week may be required for one hour credit. As a rule, a student may expect to spend three hours of time (including the class hour) for one hour of credit.

#### II. Majors and Minors

Subjects are arranged according to the following groups and divisions:

##### Group I

English

German

Greek and Latin

Romance Languages

## Group II

Bible

History and Political Science

Law, Economics, and Sociology.

Philosophy and Education

## Group III

Biology

Chemistry

Mathematics

Physics

All students who are candidates for the degree of Bachelor of Arts are required to complete a Major and two Minors. A Major consists of six semester courses or eighteen semester hours in one division of a group; a Minor consists of three semester courses or nine semester hours in one division of a group. Neither a prescribed course nor a course of the Freshmen or the Sophomore Year shall be counted toward a Major or a Minor.

The Minors must be outside of the Group in which the Major is contained.

The choice of the Major and the Minors must be registered before or during the second semester of the Sophomore Year and with the advice and the approval of the Dean and of the Professor or Professors in charge.

## III. Credits

Each candidate for the degree of Bachelor of Arts is required to present at least one hundred and twenty-eight credit hours, not including physical education.



## IV. Conspectus of the Course of Study Leading to the A.B. Degree

### FRESHMAN YEAR

First Semester	Credit Hours	Second Semester	Credit Hours
Prescribed:		Prescribed:	
English Composition	3	English Composition	3
Fundamentals	1	Mathematics	4
Mathematics	4	Physical Education	3-1
Physical Education	3-1	Public Speaking	2
Public Speaking	2		
Electives:		Electives:	
French	3	French	3
German	3	German	3
Greek	3	Greek	3
Latin	3	Latin	3
Science		Science	
Botany or	5	Botany or	5
Chemistry or	5	Chemistry or	5
Physics	3	Physics	3
Spanish	3	Spanish	3
Military Science	3-1	Military Science	3-1

### SOPHOMORE YEAR

First Semester	Credit Hours	Second Semester	Credit Hours
Prescribed:		Prescribed:	
English Literature	3	English Composition	3
History	3	History	3
Physical Education	3-1	Physical Education	3-1
Electives:		Electives:	
Economics	3	French	3
French	3	German	3
German	3	Government	3
Greek	3	Greek	3
Greek Civilization	3	Latin	3
Latin	3	Logic	3
Mathematics	3	Mathematics	3
Science		Roman Civilization	3
Biology or	5	Science	
Botany or	5	Biology or	5
Chemistry or	5	Botany or	5
Physics	3	Chemistry or	5
Spanish	3	Physics	3
Military Science	3-1	Spanish	3
		Military Science	3-1

## JUNIOR YEAR

## SENIOR YEAR

	Credit Hours		Credit Hours
Philosophy	9	Major	9
Major	9	Minors	9
Minors	9	Electives	14
Electives	5		

## V. Regulations

1. Sixteen credit hours are required in each semester. A student who has obtained an average of "A" in a semester may take more than sixteen hours in the following semester. No student may elect more than nineteen hours in a semester.

2. A total of four years' work (including preparatory work) in foreign language is required for graduation. Even if four years of foreign language are accepted for entrance a minimum of one year will be required in college. A student who begins a foreign language in college must pursue it for at least two years.

3. A student who elects two foreign languages in the Freshman Year will postpone Science to the Sophomore Year.

4. Ancient Civilization is prescribed for all students who do not pursue an ancient language.

5. Members of the R. O. T. C. are excused from Physical Education.

6. The young women are required to take Physical Education in the Junior Year in addition to the work in the Freshman and Sophomore years.

## Requirements for the Degree of Bachelor of Science

The degree of Bachelor of Science is conferred on a candidate who has completed the course in one of the following technical departments: Biology, Chemical Engineering,

Civil Engineering, Electrical Engineering, Mechanical Engineering and Home Economics. The designation of the degree is Bachelor of Science in Biology, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering or in Home Economics.

### Electives

In the choice of electives the regulations pertaining to the choice of electives for the degree of Bachelor of Arts apply, as far as may be necessary, to the choice of electives for the degree of Bachelor of Science.

### Conspectus of Courses Leading to the Degree of Bachelor of Science

Cl. stands for class-room hours.

L. stands for laboratory hours.

Cr. stands for credit hours.

## BIOLOGY

### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry	3	4	5	Chemistry	3	4	5
English	3		3	English	3		3
Fundamentals	1		1	Mathematics	5		5
Mathematics	5		5	Mechanical Drawing		4	2
Mechanical Drawing		4	2	Modern Language	3		3
Modern Language	3		3	Physical Education		3	1
Physical Education		3	1	Military Science (Elective)	3		1
Military Science (Elective)	3		1				

### SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Botany	3	4	5	Botany	3	4	5
Chemistry, Quantitative	3	4	5	Physical Education		3	1
English Literature	3		3	Physiology	3	4	5
Physical Education		3	1	Scientific French or German	1		1
Scientific French or German	1		1	Zoology	3	4	5
Zoology	3	4	5	Military Science (Elective)	3		1
Military Science (Elective)	3		1				

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Microscopic Anatomy (Embryology)	3	4	5	Comparative Psychology	3		3
Physics	3	4	5	Microscopic Anatomy (Histology)	3	4	5
Psychology	4		4	Physics	3	4	5
Electives:				Sanitary Science	2		2
Modern Language	3		3	Electives:			
Organic Chemistry	3	4	5	Entomology	1	4	3
Ornithology		4	2	Ethics	3		3
Physiological Psychol- ogy	3		3	Forestry	3	4	5
Physiology, Advanced	3	4	5	Literature	3		3
Military Science (Ad- vanced)		5	2	Modern Language	3		3
				Ornithology		4	2
				Military Science (Ad- vanced)		5	2

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Bacteriology	3	4	5	Electives:			
Geology	3	4	5	Anatomy, Human	1	4	3
Electives:				Bacteriology, Advanced	3	4	5
Genetics	3		3	Geology, Economic	3	4	5
Osteology	1	4	3	Other electives from the Junior and Senior Electives of the A. B. Course			
Other electives from the Junior and Senior Electives of the A. B. Course				Military Science (Ad- vanced)		5	2
Military Science (Ad- vanced)		5	2				

## CHEMICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry	3	4	5	Chemistry	3	4	5
Drawing		4	2	Drawing		4	2
English	3		3	English	3		3
Fundamentals	1		1	German (or French)	3		3
German (or French)	3		3	Mathematics	5		5
Mathematics	5		5	Physical Education		3	1
Physical Education		3	1	Public Speaking		2	2
Public Speaking		2	2	Military Science (Elective)	3		1
Military Science (Elective)	3		1				

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Calculus	3		3	Calculus	3		3
Descriptive Geometry	1		1	Descriptive Geometry	1		1
Metallurgy	2	2	3	Physical Education		3	1
Physical Educatio.		3	1	Physics	3	4	5
Physics	3	4	5	Quantitative Chemistry	3	4	5
Quantitative Chemistry	3	4	5	Shop Work		4	2
Shop Work		4	2	Military Science (Elective)	3		1
Military Science (Elective)	3		1				

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Electrical measurements	2	6	5	German Chemistry	1		1
German Chemistry	1		1	Organic Chemistry	3	4	5
Organic Chemistry	3	4	5	Physics (Advanced)	2	6	5
Strength of Materials	2		2	Strength of Materials	1		1
Electives:				Electives:			
Direct Current Machinery	3	4	5	Alternating Current Machinery	3	4	5
Economics (selected subject)	3		3	Boilers and Engines	4	2	5
Machine Design	1	2	2	Calculus (Advanced)	3		3
Theoretical Mechanics	3		3	Economics (selected subject)	3		3
Military Science (Advanced)		5	2	Machine Design	1	2	2
				Military Science (Advanced)		5	2

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemical Preparations		8	3	Chemical Preparations		8	3
Commercial Law	1		1	Contracts and Specifications	1		1
Industrial Chemistry	2	2	3	Industrial Chemistry	2		2
Physical Chemistry	3	4	5	Physical Chemistry	3	4	5
Electives:				Electives:			
Economics	3		3	Boiler Design		3	1
Geology	3	4	5	English Composition	3		3
Military Science (Advanced)		5	2	Economics	3		3
				Geology	3	4	5
				Military Science (Advanced)		5	2

Students are also allowed to select electives of corresponding semester of the Junior Year, at the option of the Head of the Department of Chemical Engineering.

## CIVIL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry	3	4	5	Chemistry	3	4	5
Drawing		4	2	Drawing		4	2
English	3		3	English	3		3
Fundamentals	1		1	Mathematics	5		5
Mathematics	5		5	Modern Language	3		3
Modern Language	3		3	Military Science (Elective)	3		1
Military Science (Elective)	3		1	Physical Education	3		1
Physical Education	3		1	Shop Work	4		2

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Calculus	3		3	Calculus	3		3
Descriptive Geometry	1		1	Descriptive Geometry	1		1
Drawing		2	1	Drawing		2	1
Metallurgy	2	2	3	Elective	3		3
Modern Language	3		3	Goedetic Surveying	2		2
Surveying	10		5	Modern Language	3		3
Military Science (Elective)	3		1	Surveying		10	5
Physical Education	3		1	Military Science (Elective)	3		1
Shop Work	4		2	Physical Education	3		1

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Architectural Design	1		1	Boilers and Engines	3	2	4
City and Mine Surveying	3		3	Field Astronomy	3		3
Masonry and Foundations	1		1	Masonry and Founda-			
Physics	3	4	5	tions	2		2
Roads and Pavements	3		3	Physics	3	4	5
Strength of Materials	2		2	Strength of Materials	1		1
Theoretical Mechanics	3		3	Water Supply	3		3
Military Science (Ad-				Military Science (Ad-			
vanced)	5		2	vanced)	5		2

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Bridges and Buildings	5		5	English Composition	3		3
Direct Current Ma-				Alternating Current Ma-			
chinery	3	4	5	chinery	3	4	5
Electrical Measurements	2	6	5	Bridges and Buildings	5		5
Hydraulics	3		3	Contracts	1		1
Military Science (Ad-				Forestry	3	4	5
vanced)	5		2	Military Science (Ad-			
				vanced)	5		2



## ELECTRICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry	3	4	5	Chemistry	3	4	5
Drawing		4	2	Drawing		4	2
English	3		3	English	3		3
Fundamentals	1		1	Mathematics	5		5
Mathematics	5		5	Modern Language	3		3
Modern Language	3		3	Physical Education		3	1
Physical Education		3	1	Shop Work		4	2
Military Science (Elective)	3		1	Military Science (Elective)	3		1

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Calculus	*3		3	Calculus	3		3
Descriptive Geometry	1		1	Descriptive Geometry	1		1
Drawing		2	1	Drawing		2	1
Metallurgy	2	2	3	Modern Language	3		3
Modern Language	3		3	Physical Education		3	1
Physical Education		3	1	Physics	3	4	5
Physics	3	4	5	Shop Work		4	2
Shop Work		4	2	Corporation Finance, or			
Military Science (Elective)	3		1	Principles of Account-			
				ing, or English Com-			
				position			
				Military Science (Elective)	3		1

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
D. C. Machinery	3	4	5	A. C. Machinery	3	4	5
Electrical Measurements	2	6	5	Advanced Physics	2	6	5
Machine Design	1	2	2	Boilers and Engines	3	2	4
Strength of Materials	2		2	Machine Design	1	2	2
Theoretical Mechanics	3		3	Strength of Materials	1		1
Economics II (Elective)				Economics II (Elective)			
Military Science (Ad-				Military Science (Ad-			
vanced)		5	2	vanced)		5	2

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Bridges and Buildings	3		3	Contracts	1		1
Electrical Design	3		3	Electrical Design	3		3
Generating Stations	3		3	Electric Railways	3		3
Hydraulics	3		3	Electric Transmission	3		3
Telephones	3	2	4	Water Supply	3		3
Argumentation, or				Surveying, or		6	3
Money and Banking, or				Advanced Calculus, or			
Commercial Law				Rhet. and Eng. Com-			
Military Science (Ad-				position (IV)			
vanced)		5	2	Military Science (Ad-			
				vanced)		5	2

## MECHANICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry	3	4	5	Chemistry	3	4	5
Drawing		4	2	Drawing		4	2
English	3		3	English	3		3
Fundamentals	1		1	Mathematics	5		5
Mathematics	5		5	Modern Language	3		3
Modern Language	3		3	Physical Education		3	1
Physical Education		3	1	Shop Work		4	2

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Calculus	3		3	Calculus	3		3
Descriptive Geometry	1		1	Descriptive Geometry	1		1
Drawing		2	1	Drawing		2	1
Metallurgy	2	2	3	Elective			3
Modern Language	3		3	Modern Language	3		3
Physical Education		3	1	Physical Education		3	1
Physics	3	4	5	Physics	3	4	5
Shop Work		4	2	Shop Work		4	2

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Direct Current Machinery	3	4	5	Advanced Physics	2	6	5
Electrical Measurements	2	6	5	Alternating Current Ma-			
Industrial Management	2		2	chinery	3	4	5
Machine Design	1	2	2	Boilers and Engines	3	2	4
Steam Experiments		4	2	Elective			2
Strength of Materials	2		2	Machine Design	1	2	2
				Strength of Materials	1		1

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Automobiles		4	2	Boiler Design	2	4	4
Bridges and Buildings	3		3	Contracts	1		1
Electrical Design	3		3	Electrical Design	3		3
Hydraulics	3		3	Electrical Transmission	3		3
Power Plants	2	2	3	Heating and Ventilating	2	4	4
Steam Turbines	2	4	4	Surveying, or		6	3
				Advanced Calculus	3		3

## HOME ECONOMICS

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry	3	4	5	Chemistry	3	4	5
English	3		3	English	3		3
French	3		3	French	3		3
Fundamentals	1		1	Mathematics			3
Mathematics			5	Physical Education	2		1
Physical Education		2	1	Public Speaking	2		2
Public Speaking		2	2				

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology	3	4	5	Chemistry of Foods	2	2	3
Chemistry	2	2	3	French	3		3
English Literature	3		3	Home Economics	1	4	3
French	3		3	Physical Education		2	1
Home Decoration	1		1	Physiology	3	4	5
Hygiene	3		3	Textiles	1		1
Physical Education		2	1	Elective from A. B. Course			

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Descriptive Psychology	3	-	3	American History	3		3
European History	3		3	Child Psychology	3		3
Home Economics	3		3	Garment Making	1	4	3
Household Physics	2	2	3	Home Economics	3	2	4
Physical Education		2	1	Household Physics	2	2	3
Elective from A. B. Course				Physical Education		2	1

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Bacteriology	3	4	5	Advanced Course in Nu-			
Clothing or	1	4	3	trition, or	4		4
Dietetics	3	2	4	Institutional Cookery, or	1	2	2
Electives from the Junior				Teacher's Course in			
and Senior A. B. Course.				Methods of Presenting			
No student may take				Work			3
less than sixteen hours				Electives from the Junior			
nor more than nineteen				and Senior A. B. Course.			
hours.				No student may take			
				less than sixteen hours			
				nor more than nineteen			
				hours.			

## ADVANCED COURSES

Advanced Courses in Arts, in Science, and in Engineering have been established, leading to the degrees respectively of Master of Arts, Master of Science, Master of Pedagogy, Civil Engineer, and Electrical Engineer.

The Master's degree is conferred only on condition that the candidate has completed a Course of Liberal study, approved by the Faculty, sufficient in amount to constitute a fifth year of college work, two-thirds of which must be in one department. Particulars may be learned by addressing the President.

# COURSES OF INSTRUCTION

The term hour or hours, unless otherwise specified, signifies credit. The odd numbers indicate first semester courses.

## ART

**1. Art History.** Medieval and Modern. Juniors and Seniors. First semester. One hour. Professor Martin.

## BIBLE

**1. Hebrew History and Literature.** Juniors and Seniors. First semester. Three hours. Professor Phillips.

**2. New Testament History and Literature.** Juniors and Seniors. Second semester. Three hours. Professor Phillips.

**4. The Gospels.** Seniors. Second semester. Three hours. Professor Phillips.

**5. New Testament Greek.** (Greek 7-8). Professor Hamblin.

## BIOLOGY

Professors Davis and Stewart, and Assistant Professor Rice

It is the constant aim to teach how to interpret Nature.

The Biological Course of study has been arranged with two ideas in mind: First, to prepare students to teach Zoology, Botany, Physics, and Chemistry in Preparatory Schools, or to enter graduate schools for advanced work in Biology; Second, to prepare students for the study of Medicine. The student may select from the Medical Preparatory subjects offered such as will be required for admission to the Medical College in which he may wish to take his course in Medicine. These Medical Preparatory studies include English, Modern Language, Mathematics, Chemistry, Physics, and Biology. Most of these subjects are included in the first two years of the Biological Course. Students wishing to prepare for the study of Medicine should con-

sult with the Professors in Biology in regard to the selection of their subjects.

**1. Zoology.** Lectures, text-books, and laboratory work. The fundamental principles of Biology are presented and illustrated by direct and comparative study of the lower forms of life, beginning with the Protozoa. Attention is paid to the structure, development, relationships, behavior, and economic value of a wide series of organisms. Sophomores. First semester. Five hours.

**2. Zoology.** The second semester continues the comparative study of animals by dissection of the higher forms, including mammals. Sophomores. Second semester. Five hours.

Prerequisite: Course 1.

**3. Ornithology.** A study of living birds in the field. The student learns the terms used in describing birds by the use of text-books, bird skins and mounted specimens. The course includes: "Finding and Naming Birds", "The Distribution of Birds", "Migration of Birds", "The Voice of Birds", "The Nesting of Birds", "The Plumage of Birds", "The Food of Birds", and "The General Activities of Birds". The student is taught how to make bird skins. Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2.

**4. Ornithology.** The course continues the work of the first semester. Juniors. Second semester. Two hours.

**6. Entomology.** Recitations and laboratory work. In this course each student makes a thorough study of the dissection, life history, and habits of insects representative of the different orders. Special attention is given to the economical importance and relation of insects to agriculture. Juniors. Second semester. Two hours.

Prerequisite: Course 1.

**7. Microscopic Anatomy.** Lectures, text-books, and laboratory work. The first semester's work covers the embryology of representative forms as the chick and pig. The methods employed in the laboratory give the student much practice in fixing, dehydrating, embedding, and sectioning tissues. Juniors. First semester. Five hours.

Prerequisite: One year of Zoology and Descriptive Chemistry.

**8. Microscopic Anatomy.** The second semester covers the histology of the human body and is illustrated by the preparation of a large series of microscopic slides by each student. Juniors. Second semester. Five hours.

Prerequisite: Course 7.



**9. Osteology.** Lectures covering the development of the skeletal system. Laboratory work on the human skeleton articulated and disarticulated; the gross structure of bones; the preparation and comparative study of skeletons of other vertebrates. Seniors. First semester. Three hours.

Prerequisite: One year of Zoology.

**10. Human Anatomy.** Dissection and quizzes on the parts dissected. Each student is assigned to the dissection of one quarter of the human cadaver. This course is designed to instruct the student in the general method of dissection in the relation of the structures in the body, and to present a general idea of regional anatomy. Models and text-books are used as guides. Juniors. Second semester. Three hours.

Prerequisite: One year of Zoology.

**12. Human Anatomy.** A course similar to the preceding. The student is assigned to the part of the cadaver which he has not previously dissected. This course in Human Anatomy, following the preceding one, affords the student an opportunity to make a dissection of the entire human body. Seniors. Second semester. Three hours.

Prerequisite: Course 10.

**14. Human Physiology.** The aim of this course is to acquaint the student with the general principles of Physiology, including a brief survey of the structure of the human body, motion, the central nervous system, organs of special sense, respiration, circulation, digestion, secretion, and excretion.

The work consists of lectures, demonstrations, and a personal study by the student of a designated text-book in Physiology. Each student spends four hours a week in the laboratory performing practical experiments in Physiology. Sophomores. Second semester. Five hours.

**15. Human Physiology, Advanced.** A more detailed study of the action of motor and nerve tissue is made in this course than in the preceding one. Likewise more advanced work is presented on blood and circulation, external and internal respiration, regulation of body heat, chemical coordination, digestion and absorption.

The course consists of lectures and demonstrations. Each student spends four hours a week in the laboratory and has the use of all essential apparatus needed to experiment with freshly prepared material. Considerable time is spent on the physiological chemistry of

blood, milk, foods and urine. Juniors. First semester. Five hours.

Prerequisite: One year of college Zoology, Chemistry, Physics, and Course 14.

**13. Biology, Domestic Science.** This course is designed to present the fundamental properties of living matter. The structure, form, and life habits of one-celled and multi-cellular plants and animals are studied. The inter-relation of the animal and plant kingdoms is presented. Simple problems in evolution and heredity are discussed.

The work consists of lectures, quizzes, and a personal study by the student of a designated text in Biology. Four hours a week are devoted to laboratory exercises on living and preserved material. Each student has the use of a compound microscope, and is instructed in its care and use. Sophomores. First semester. Five hours.

**17 and 18. Scientific German or French.** The reading of foreign Biological Literature. Sophomores. First and second semesters. Two hours.

Prerequisite: Freshman German or French.

**19. Bacteriology.** By the method of recitations, lectures, and laboratory work, the student is given the fundamentals in micro-biology. The laboratory work includes the making of culture media, methods of sterilization, isolation of bacteria in pure cultures, staining of films, the examination of bacteria, and the measuring of micro-organisms under the microscope; a study of bacteria in milk, drinking water, and sewage. Seniors. First semester. Five hours.

Prerequisite: Zoology or Biology, and the first course in Chemistry.

**21. Bacteriology, Domestic Science.** This course is similar to the preceding one. Stress is placed upon the relation of bacteria, yeasts, and molds to the preparation and preservation of foods. The bacteriological problems of personal and public hygiene and sanitation are included. Seniors. First semester. Five hours.

Prerequisites: Zoology or Biology, and the first course in Chemistry.

**22. Bacteriology, Advanced.** This course is designed to be a continuation of either of the preceding courses in Bacteriology. The characteristics of the various groups of pathogenic bacteria are presented in lectures and readings from standard text-books on Bacteriology and monographs. The laboratory work includes the cultural characteristics of the various pathogenic groups, quantitative and qualitative bacteriological analysis of milk and water, culturing of

naso-pharyngeal swabs, and some of the more simple serological reactions, such as agglutination, precipitation, etc. Seniors. Second semester. Five hours.

Prerequisite: Courses 19 and 24.

**24. Sanitary Science.** A lecture course setting forth the relation of proper sanitation to disease, the history of epidemics, the nature and value of vaccination, and other factors controlling infection and resistance. Juniors. Second semester. Two hours.

**25. Botany.** Recitations, lectures and field work. This is a general course including the anatomy of the representative types and their relation to the environment; a study is made of the local flora. The laboratory work and lectures develop the subject from the evolutionary standpoint. Sophomores. First semester. Five hours.

**26. Botany.** This course continues the work of the first semester. Field work to show the winter conditions of trees and shrubs. Systematic Botany. Use of manuals such as Gray's and Britton's and Brown's. Sophomores. Second semester. Five hours.

Prerequisite: Course 25.

**27. Genetics.** The lectures and reports deal with the facts and problems of variation and heredity, especially their application to mankind. Text-books by such authors as Walter, Castle, and Conklin. Seniors. First semester. Three hours.

**29. Geology and Mineralogy.** Recitations, lectures, and laboratory work. A general course intended to give the leading facts and principles of Geology and the more important events in the geological history of the earth. The development of the North American continent is studied in detail. The laboratory work includes determinative Mineralogy. Seniors. First semester. Five hours.

**30. Economic Geology.** Recitations, lectures and laboratory work. An economic study of the rocks and minerals of economic importance including metals and non-metals. Seniors. Second semester. Five hours.

Prerequisite: Chemistry and Geology.

**31 Physiological Psychology.** Recitations, lectures and laboratory work. The aim is to study the development of the physiological bases of the mind. Juniors. First semester. Three hours.

**32. Comparative Psychology.** Recitations, lectures and reports. The germinal bases of the mind. In the development of the mind comparisons are made between human development and that of other

animals. The oneness of life in respect to its fundamental processes is studied by such comparisons. Juniors. Second semester. Three hours.

## CHEMISTRY

The courses in this department are designed to meet the ever widening demand for chemical knowledge made by the courses in Engineering, Medicine, Domestic Science and the Arts. They are intended to give the student a wide foundation in this basic science, to develop skill in laboratory technique, careful observation, correct judgment and accurate expression. The principles and theories of chemistry are developed by studying carefully selected types of reactions. The courses prepare for teaching chemistry or for entering industrial laboratories or for Chemical Engineering.

## GENERAL CHEMISTRY

Professor Owens and Assistant Professor Schuyler

**1 and 2. Descriptive Chemistry and Qualitative Analysis.** This is a fundamental course, required of all Engineers, Biological, Medical and Domestic Science students, and is open to all others who wish to take it for its informational or cultural value. It continues throughout the year, taking up the non-metals first and following with the metals and qualitative analysis. In the latter about forty unknowns are determined. The work is conducted by text-book, lecture, and laboratory. Freshmen. First and second semesters. Ten hours.

**3 and 4. Organic Chemistry.** The saturated hydrocarbons and their derivatives are studied with special regard to their constitution. Later the unsaturated hydrocarbons of the olefine and acetylene series are studied. Carbohydrates are taken up. The preparation and properties of typical compounds are discussed, attention being directed to those changes which come under the head of general reactions, rather than isolated facts regarding particular substances. Pure organic compounds are prepared in the laboratory and their reactions investigated. Ultimate organic analysis begun; Carius' determinations for the halogens and sulphur. Written reports with criti-



cal discussions of the reactions, methods, etc., are required for all laboratory work.

In the second semester the dibasic acids and their derivatives are studied. Stereo chemistry. Ureides and proteins. Later the aromatic hydrocarbons and their derivatives, polycyclic and heterocyclic compounds, terpins and camphors are studied. Particular attention is given to questions of constitution, one of the objects being to train the students to think out such matters, and to attempt to deduce a constitutional formula for a given substance, by comparing its properties with those of others of known composition. In the laboratory ultimate organic analysis is continued with determinations of carbon, nitrogen and hydrogen. Pure organic compounds are prepared and their reactions investigated, as before. Written reports as in the first semester. Juniors. First and second semesters. Ten hours.

Prerequisites: Chemistry 1-2 and Chemical Engineering 1.

**5. Metallurgy.** The sources, manufacture, properties and uses of the different metals, with the influence which various impurities exert, are studied. Special attention is given to iron and steel, also the various special alloys which are being placed upon the market. Text, lecture, and laboratory. Sophomores and Juniors. First semester. Three hours.

Prerequisites: Chemistry 1, 2.

**6. Agricultural Chemistry.** By text-book, lectures and laboratory the chemistry of plants and animals is studied. Soils, fertilizers and feeds are analyzed. The principles on which successful agriculture depends are studied. This course covers the legal requirements for teachers of Pennsylvania high schools. Juniors. Second semester. Three hours.

Prerequisites: Chemistry 1, 2.

**7 and 8. Food Chemistry.** Consists of a course designed to acquaint the student with the chemical compounds which are found in foods, the changes which take place in digestion and assimilation and the tests by which they are identified. Sophomores. First and second semesters. Six hours.

Prerequisites: Chemistry 1, 2.

**Quantitative Analysis,** see Chemical Engineering.

**Industrial Chemistry,** see Chemical Engineering.

**Inorganic Preparations,** see Chemical Engineering.

**Special Courses.** Special courses in chemical subjects have been given under certain conditions. The offering of a special course is at the option of the professor in whose department such work would fall and is usually dependent upon the available time of the professor and the type of the individual student. Such courses have been given in Advanced Organic Preparations, Advanced Quantitative Analysis, Mineral Analysis, Industrial Analysis, Micro-chemical Analysis (including work with the polarimeter-microscope), and similar courses. These courses have been primarily advanced laboratory courses.

## CHEMICAL ENGINEERING

Professor Brown and Assistant Professor Schuyler

**1 and 2. Quantitative Analysis.** Lecture, recitation and laboratory work. This course aims to teach the student the fundamentals of analytical procedure and manipulation. Gravimetric and volumetric determinations are first made with pure chemicals. This is followed by the analysis of limestone, ores, alloys, oils, gas, water, etc. The latter part of the second semester is given to special methods in technical analysis and the determination of traces of impurities in the so-called "chemically pure" reagents. Sophomores. First and second semesters. Ten hours.

Prerequisites: Chemistry 1, 2.

**3 and 4. Industrial Chemistry.** A series of lectures and recitations upon the most important technical chemical operations exclusive of metallurgy. It is essentially a study of the application of chemical principles to technical processes and the mechanical methods of applying these processes, supplemented, so far as possible, by visits to plants in operation. The course includes a study of such industries as the manufacture of sulphuric acid, alkalies, glass, cement, rubber, paper, dyestuffs, etc. Seniors. First and second semesters. Four hours.

Prerequisites: Chemistry 1, 2, 3, 4, 5.

**5 and 6. Chemical Preparations.** Primarily a laboratory course, the experiments duplicating, so far as possible, the operations used in industrial works. Underlying principles and percentage yield are required in the written report of each experiment. About thirty-five preparations are required. Inorganic substances are first prepared and purified. Approximately one-third of the work consists of



the electrolytic preparation of inorganic and organic compounds. Seniors. First and second semesters. Six hours.

Prerequisites: Chemistry 1, 2, 3, 4, 5, 6, and Chemical Engineering 9, 10.

Physics 2, 3.

**7 and 8. Physical Chemistry.** Class and laboratory work. Class work consists of lectures, recitations and problems. This course is fundamental in character and is intended to develop the idea of physical chemistry as applied to actual problems in industrial operations. A study is made of the kinetic theory of gases, gas laws, vapor pressure, equilibria, phase rule, theories of solution, osmotic pressure, etc. The latter part of the year is given to the study of electro chemistry and chemical statics and dynamics. Laboratory work is one experiment per week. Written reports and discussions required for each experiment. The laboratory work includes the determination of density of gases, viscosity, optical activity, refraction, partition coefficients, molecular weights by various methods, reaction velocity, transport numbers, electromotive force, conductivity, etc. Students use the calorimeter, colorimeter, refractometer, polarimeter, tintometer, viscosimeter, etc., and are made to recognize their application to industrial problems. Seniors. First and second semesters. Ten hours.

Prerequisites: Chemistry 1, 2, 3, 4, and Chemical Engineering 1, 2, 9, 10.

Mathematics: Through Integral Calculus.

Physics: All Engineering Physics to the end of the Junior year.

**9 and 10. German Chemistry.** A course in which a study is made of selections from standard German periodicals. The work in this course is usually a study of the *Chemiker Kalender* for the current year. Juniors. First and second semesters. One hour.

Prerequisites: Chemistry 1, 2, and Chemical Engineering 1, 2.  
German: One year.

**Special Chemical Courses.** See Department of Chemistry.

## CIVIL ENGINEERING

Professor Lindemann

**1. Architectural Design.** A course in which are considered the elementary principles of building construction. Juniors. First semester. One hour.

**3 and 4. Bridges and Buildings.** The work of this course includes the solution of problems in graphic statics; the determination of stresses and deformations in framed structures by graphic and algebraic methods; the calculation and design of roof and bridge trusses, also the detailing and drafting of the same. Seniors. First and second semesters. Ten hours.

**6. Contracts.** A course in which are considered the principles of Common Law as applied to contracts. Seniors. Second semester. One hour.

**7. Hydraulics.** The work of this course includes the theory of Hydrostatics and Hydraulics; the flow of water over weirs, through orifices and tubes, and in pipes, canals and rivers; the measurement of water-power; the theory of water-wheels and turbines. Seniors. First semester. Three hours.

**9 and 10. Masonry and Foundations.** The work of this course includes a consideration of the materials of masonry construction, their preparation and use; a study of foundations—ordinary, pile and under-water; the investigation and design of masonry dams, retaining walls, abutments, piers, chimneys, culverts and arches. Juniors. First semester. One hour. Second semester. Two hours.

**11. Roads and Pavements.** The work of this course includes a study of the economic location, design, and construction of roads and pavements; a comparison of the materials and methods of construction; the design of some road or pavement, including the preparation of drawings, specifications and estimates for the same. Juniors. First semester. Three hours.

**13 and 14. Strength of Materials.** The work of this course includes a study of simple and combined stresses, and the resulting deformations; a consideration of the methods employed in testing the materials of construction; the solution of numerous problems in the design and investigation of beams, columns, shafts, pipes and footings. Reinforced concrete receives special attention. Juniors. First semester. Two hours. Second semester. One hour.

**16. Water Supply and Sanitary Engineering.** The work of this course includes the consideration of collection and storage of water, quantity of water required, rainfall, flow of streams, evaporation, supplying capacity of water-sheds; springs and wells; a study of the various methods of sewage disposal; the design of a water supply system and of a sewage disposal plant. Juniors. Second semester. Three hours.

**Surveying, see Surveying.**

## ECONOMICS AND POLITICAL SCIENCE

Professor Heim

### ECONOMICS

**1. Economics I.** A general course covering the principles of the subject, with emphasis on Production and Distribution. Sophomores. First semester. Three hours.

**3 and 4. Economics II.** Current Economic Problems. Application of principles to a detailed study of current economic questions. For the year 1920-21, the following subjects will be studied:

**a. Railroad Transportation.** Juniors and Seniors. First semester. Two hours.

**b. Organization of Industry and Markets.** Juniors and Seniors. Second semester. Two hours.

**5. Money and Banking.** Juniors and Seniors. First semester. Three hours.

**6. Corporation Finance.** A study of the financial operations of corporations, the form and character of investment securities, and principles of capitalization. Juniors and Seniors. Second semester. Three hours.

**7. Commercial Law.** Juniors and Seniors. First semester. Two hours.

**8. Principles of Accounting.** Juniors and Seniors. Second semester. Two hours.

### POLITICAL SCIENCE

**10. Government of U. S.** A study of constitutional law as developed and applied to the problems of government in the United States. Sophomore. Second semester. Three hours.

**11. Comparative Politics.** A comparative study of European Governments. Juniors and Seniors. First semester. Three hours.

**12. International Law.** Juniors and Seniors. Second semester. Three hours.

**14. Public Administration.** A study of the principles of public administrative law and organization. Juniors and Seniors. Second semester. Two hours.

**15. Political Parties.** Organization and functions of political parties, with special reference to the United States. Juniors and Seniors. First semester. Two hours.

## EDUCATION

Professor Phillips

1. **History of Education.** Juniors and Seniors. First semester. Three hours.
2. **Psychology of Education.** Juniors and Seniors. Second semester. Three hours.
4. **Philosophy of Education.** Juniors and Seniors. Second semester. Three hours.
5. **Educational Theories.** Seniors. First semester. Two hours.
6. **Secondary Education.** Seniors. Second semester. Three hours.
7. **Religious Education.** Juniors and Seniors. First semester. Two hours.

**Comparative Psychology.** (Biology 32). Professor Davis.

**Child Study.** (Home Economics 22). Professor Carey.

**Teachers' Course in English.** (English Literature 16). Professor Fries.

**Teachers' Course in Mathematics.** (Mathematics 24). Assistant Professor Everett.

## ELECTRICAL ENGINEERING

Professor Rhodes

1. **Direct Current Machinery.** This course begins with a brief review of electromagnetism, followed by a careful study of the electric circuit involving the principles of the simpler alternating current circuits. Numerous problems are given to clearly illustrate the laws of these circuits. Attention is given to the various types of electrical measuring instruments, and their calibration, measurements of inductance, capacity and resistance. Then follows a careful study of the principles of dynamo electric machines as to their structural details, performance characteristics, and problems in operation. The work of the course is accomplished through lectures, recitations, laboratory experiments and writing of reports. Juniors. First semester. Five hours.

This course must be preceded or accompanied by the course in Electrical Measurements.



**2. Alternating Current Machinery.** The study of applied circuits is enlarged upon in this course and extended to include generators, transformers, induction motors, synchronous motors, synchronous converters, and motor generators. The same plan is followed as that in the development of the preceding course, and the laboratory work is primarily designed to illustrate the theory of the course, but wherever practicable, commercial tests in operation are performed. Juniors. Second semester. Five hours.

This course must be preceded by the course in Direct Current Machinery.

**3. Theoretical Mechanics.** A rapid review of the type forms of differential equations most frequently met in this work is taken up first. Then follows the study of forces, couples, moment of inertia, and flexible cords, together with the geometry of motion, dynamics of machinery, work, energy, and impact. Juniors. First semester. Three hours.

This course must be preceded by one year of calculus.

**5 and 6. Electrical Design.** Numerous problems on the magnetic circuit are taken up and followed with the design and working drawing of an electromagnet. Then follows the discussion of the principles of design as applied to continuous and alternating apparatus. Each student is required to make complete computations for a continuous current generator or motor, alternator, induction motor, and two transformers. All electrical and magnetic dimensions are computed and scale drawings of the important parts are made. Seniors. First and second semesters. Three hours each semester.

Must be preceded by D. C. Machinery and A. C. Machinery.

**7. Generating Stations.** Comparative performance of the important prime movers and the economic management of generating plants and substation equipment are studied in detail and practical estimates made. Attention is also given to the application of storage batteries to the problems of distribution. The care of storage batteries, arrangement of switch gear, instruments, transformers, and lightning arresters are taken up in their relation to the generating station. Seniors. First semester. Three hours.

Must be preceded by Alternating Current Machinery, and Boilers and Engines.

**9. Telegraphy and Telephony.** Attention is given in detail to the various systems of electric telephony and telegraphy in practical use, with reference to their principles and modes of application. The in-

stallation, maintenance and testing of telephone and telegraph lines are considered as well as the difficulties of their operation. Efficiency tests are made and graphs plotted. Seniors. First semester. Four hours.

Electrical Measurements, D. C. Machinery, and A. C. Machinery are prerequisites for this course.

**10. Electric Transmission, Line Construction, Wiring, and Economics.** The various systems and arrangements for power distribution, wiring for lighting, and substation feeder systems, are investigated. Practical problems in the economics of transmission and distribution including line construction are computed, and complete typical systems are worked out in detail. Seniors. Second semester. Three hours.

Must be preceded by course in Alternating Current Machinery.

**12. Electric Railways, Construction, Operation, and Economics.** This course deals with the principles and design of the different types of railway construction. Analysis of train performance, types of control, systems of braking, and methods of motor suspension are studied in detail. Estimates of complete equipment for a short line are made and prospective revenue from operation considered. The economics of the operation and maintenance of American railways is considered in the conclusion of the course. Seniors. Second semester. Three hours.

Alternating Current Machinery is a prerequisite for this course.

**13 and 14. Machine Design, Machine Tools.** Elementary machines, generation of tooth outline, and aggregate combinations, are studied in detail. This is followed by the design of type forms of cutting and grinding tools, accompanied by the execution of carefully made scale drawings of these machines. Juniors. First and second semesters. Four hours.

This course must be preceded by all of the courses in drawing offered during the freshman and sophomore years.

## ENGLISH

Professors Perrine, Fries, Rockwell and Assistant Professor Rassweiler

### A. ENGLISH LITERATURE

Professor Perrine

**1. English Literature, General.** Sophomores. First semester. Three hours.



**2. Victorian Literature.** Juniors and Seniors. Second semester. Three hours.

**3. Period of Revolt.** Wordsworth, Coleridge, Shelley, Byron, 1790-1832. Juniors and Seniors. First semester. Three hours.

**5. Eighteenth Century Literature, 1714-1790.** Juniors and Seniors. First semester. Three hours.

**7. Puritan Restoration Literature.** Juniors and Seniors. First semester. Three hours.

Alternating with 5.

**8. Shakespeare.** Juniors and Seniors. Second semester. Three hours.

**10 Pre-Shakespearian Drama.** Juniors and Seniors. Second semester. Three hours.

**11. Chaucer.** Juniors and Seniors. First semester. Three hours.

**13 Anglo-Saxon.** Juniors and Seniors. First semester. Three hours.

Alternating with 11.

**14. American Literature.** Juniors and Seniors. Second semester. Three hours.

**15. Modern Drama.** A study of the new dramatic literature; its varieties, technique, aims and problems. Juniors and Seniors. First semester. Three hours. Professor Fries. [Omitted 1920-1921].

**16. Teacher's English.** Second semester. Three hours. Professor Fries. [Omitted 1920-1921].

Prerequisite: Course 14.

## B. RHETORIC AND COMPOSITION

Professors Fries and Rockwell

**1. Introductory College Course.** First semester. Three hours. Required of all students in the first year.

**2. Continuation of Course 1.** Second semester. Three hours. Required.

**4. Rhetoric and Composition.** Second semester. Three hours.

Required of all candidates for the degree of A.B. who have completed Courses 1 and 2.

**6. Rhetoric and Composition.** Second semester. Three hours.  
An advanced course for students in the Engineering and Science Courses.

**8. Journalism.** Juniors and Seniors. Second semester. Three hours.

**9. Argumentation, Theory and Practice.** An advanced course. Juniors and Seniors. First semester. Three hours. [Omitted 1920-1921].

**10. Advanced Composition.** A discussion and practice of the Essay, the Short-Story, and the Special Article. Seniors. Second semester. Three hours.

Open only to those who receive special permission.

**11. Prose Fiction.** Studies in the structure and function of the leading types of prose fiction. Juniors and Seniors. First semester. Three hours.

**12. Literary Criticism.** Main currents in literary criticism, historical and philosophical. Juniors and Seniors. Second semester. Three hours.

**13. Diction and Usage.** An historical approach to the problem of good English. General principles to guide decisions of questions of grammar, pronunciation, and vocabulary. Juniors and Seniors. First semester. Three hours. [Omitted 1920-1921].

**14. The Teaching of English.** Juniors and Seniors. Second semester. Three hours. [Omitted 1920-1921].

Open only to those who have completed Course 13.

### C. PUBLIC SPEAKING

Assistant Professor Rassweiler

The work in Public Speaking is designed and conducted first of all to intensify impression and to free and empower the impulses of expression. Later these awakened powers are given more technical education. A text-book is used with each course for theory, but the recitation and laboratory periods are used for actual practice in the art of public speech. Work in voice, action, and in pronunciation is continued throughout the courses.

In the first four courses, students are required to take six laboratory periods under one of the assistants. Here students are given a hearing preliminary to presenting their selections before the class, and here more individual work in voice, gesture, and extempore speaking is given.

All candidates for the degree of Bachelor of Arts are required to take two of the first four courses during the first year, course 1 or 3 is advised for the first semester, and course 6 or 8 for the second. Either or both of the remaining two courses may be elected during the Sophomore year.

The courses offered are as follows:

**1. Story Telling.** This subject is treated primarily not as an elocutionary art, but as the beginning of the study of the art of public address. First semester. Two hours.

**3. Interpretation.** The art of discerning, sympathetic, and melodious reading. First semester. Two hours.

**6. Effective Public Speaking.** Special attention is given to those principles of oral rhetoric which distinguish effective oral expression from the written form, the construction of speeches with a definite end in view adapted to a particular occasion, the development of a fluent oral vocabulary, and the public speaker's habit of mind. Second semester. Two hours.

**8. Debating.** Both theory and practice. Second semester. Two hours.

**9 and 10. The Elements of Expression.** A course for those desiring to do advanced work or who want work in Elocution. Problems of teaching are also discussed. First and second semesters. Two hours.

Required for the assistants in the department and elective for others.

**11. Advanced Debating.** First semester. Three hours.

Prerequisite: Course 8.

**12. Oratory.** Special attention is given to vigor and climax, and to the study of masterpieces. Second semester. Two hours.

Prerequisite: Course 6.

**13. Advanced Interpretation.** Special attention is given to emotional reaction and rendition. First semester. Two hours.

Prerequisite: Courses 3, 9, 10.

Alternating with 15.

**15. Dramatic Interpretation and Amateur Dramatics.** Dramatic expression, action, and problems in amateur stage craft. First semester. Two hours.

Prerequisite: Courses 3, 9, 10.

Alternating with 8.

## FUNDAMENTALS

President Hunt

1. The President meets the Freshmen, in four sections, one hour a week the first semester in a study of fundamental truth and the problems of student life. One hour.

The text-book for study is Fisher's small Manual of Christian Evidences.

## GERMANIC LANGUAGES

Professor Rockwell

1. **Elementary German.** Drill on pronunciation. Elements of grammar. Reading of easy prose. First semester. Three hours.

2. **Elementary German.** Reading of easy prose, free reproduction, vocabulary drill, dictation. Second semester. Three hours.

3. **Intermediate German.** Reading of prose. Practice in speaking and writing German. Vocabulary drill. Dictation. First semester. Three hours.

Prerequisite: Course 2 or its equivalent.

4. **Nineteenth Century Novel.** Rapid reading of leading novelists. Practice in speaking and writing German. Second semester. Three hours.

Prerequisite: Course 3.

5. **Schiller.** Reading of leading dramas. Discussion of life and work of Schiller. First semester. Three hours.

Prerequisite: Course 4.

6. **Lessing.** Reading of leading dramas, discussion of life and significance of Lessing. Second semester. Three hours.

Prerequisite: Course 5.

7. **Goethe.** Reading of principal dramas. Discussion of life and work of Goethe. First semester. Three hours.

Prerequisite: Course 6.

8. **Goethe.** Reading of Goethe's prose, discussion of his significance. Second semester. Three hours.

Prerequisite: Course 7.

9. **Nineteenth Century Drama.** Kleist and Grillparzer. Reading of principal dramas, discussion of their life and work. First semester. Three hours.

Prerequisite: Course 8.

**10. Nineteenth Century Drama.** Hebbel and Ludwig. Reading of principal dramas, discussion of their life and work. Second semester. Three hours.

Prerequisite: Course 9.

**11. The German Lyric.** Goethe, Schiller, Heine, Uhland, and minor poets. First semester. Three hours.

Prerequisite: Course 8.

**12. The Last Generation in German Literature.** A brief survey of modern developments in German and Austrian literary life. Second semester. Two hours.

Prerequisite: Course 11.

**14. Teachers' Course.** A brief survey of the materials and methods of the teaching of German. Second semester. One hour.

Prerequisite: Course 11.

**15 and 16. Readings in Biological German.** First and second semesters. Two hours.

Prerequisite: Course 2 or its equivalent.

**17 and 18. Readings in German Chemistry.** First and second semesters. Two hours.

Prerequisite: Course 4 or its equivalent.

## GREEK

Professor Hamblin

Students entering without preparation in the language can begin Greek in College.

**1 and 2. Greek for Beginners.** An introduction to the Greek language based upon graded selections from Menander, Xenophon, Plato, Herodotus, and the New Testament. By an intensive study of the essential forms, a careful study of the vocabulary of representative Greek authors, and reading easy selections at sight, it is intended to cover in one year an equivalent of the usual Preparatory Course. First and second semesters. Six hours.

**3. Plato.** The Apology and Crito. Special topics in Greek syntax. The life and influence of Socrates. Selections from the Memorabilia at sight. First semester. Three hours.

**4. Lysias.** Select orations, with sight reading and Prose Composition. A study of Attic Oratory. Second semester. Three hours.



**5 and 6. Greek Drama.** One play each of Aeschylus, Euripides, and Aristophanes. Study of the Greek drama, theatre and meters. The development of drama. First and second semesters. Six hours. Alternating with Course 7-8.

**7 and 8. New Testament Greek.** Translation of the synoptic gospels; interpretations; Burton's Moods and Tenses; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. First and second semesters. Six hours.

Alternating with Course 5-6.

**9. Greek Civilization.** Political and Constitutional History of Greece. Influence of Greek civilization and thought on the world. Sophomores. First semester. Three hours.

Required of students in the A. B. Course who do not elect an ancient language.

**10. Greek Literature in English.** A course especially designed for students in the Scientific Courses, that they may become acquainted with some of the Greek masterpieces. The best translations will be studied and explained, and informal lectures will be given on various phases of Greek Literature. Seniors and Juniors. Second semester. Three hours.

**12. Everyday Greek.** Greek words in English, including scientific terms. Intended to teach the use, meaning, and pronunciation of words of Greek origin, to those who have never studied the Greek language. Seniors and Juniors. Second semester. Two hours.

## HISTORY

Professor Colestock

**1. Medieval Europe.** First semester. Three hours.

Required in the Sophomore year in the A. B. Course.

**2. Modern Europe.** Second semester. Three hours.

Required in the Sophomore year in the A. B. Course.

**3. English History to the Beginning of the American Colonies.** Juniors. First semester. Three hours.

**4. The British Empire.** Juniors. Second semester. Three hours.

**5. American Colonial and Revolutionary History.** Seniors. First semester. Three hours.

Prerequisite: Course 3.



**6. United States History.** Seniors. Second semester. Three hours.

Prerequisite: Courses 3 and 5.

**7. Contemporary History of Europe.** Juniors and Seniors. First semester. Three hours.

Given in alternate years.

**8. American Constitutional History.** Seniors. Second semester. Three hours.

Given in alternate years.

**9. The Renaissance and the Reformation.** Seniors. First semester. Two hours.

Given in alternate years.

**10. The French Revolution and the Empire of Napoleon.** Seniors. Second semester. Two hours.

Given in alternate years.

**11. History of South America.** Juniors and Seniors. First semester. Two hours.

Given in alternate years.

**12. The Ancient Orient.** Juniors and Seniors. Second semester. Two hours.

Given in alternate years.

**13. English History.** Seniors. First semester. One hour.

Given in alternate years.

**14. American History.** Seniors. Second semester. One hour.

Given in alternate years.

**15 and 16. Studies in the Legal Basis of American History: Elementary Law.** Juniors and Seniors. First and second semesters. Two hours.

Given in alternate years.

**Greek Civilization.** (Greek 9). Professor Hamblin.

**Roman Civilization.** (Latin 10). Professor Ballentine.

## HOME ECONOMICS

Professor Carey, Miss Rainey, Miss Fowler, and Miss Downer

Instruction in home economics is designed to meet the needs of two classes of students: (1) Students who desire

a general knowledge of the subject, but who do not wish to specialize in any phase of the subject; (2) Students who wish to specialize in some particular phase of the subject and make professional use of the training received. Upon completion of the prescribed course leading to the degree of B.S. in Home Economics, the pupil is ready for teaching or for a short practical course as pupil dietitian in a hospital or other institution.

**1. Home Decoration.** This course deals with the furnishing of the home. The object of the course is to develop good judgment and taste in the selection and arrangement of furnishings for the home. Sophomores. First semester. One hour.

**2. Textiles.** Study and identification of cotton, wool, silk and linen; their appropriateness in clothing. Sophomores. Second semester. One hour.

**4. Garment Making.** Elementary sewing; fundamental stitches, hand and machine work, applied to undergarments, darning, mending, machine appliances. Students provide material subject to the approval of the instructors. Juniors. Second semester. Three hours.

**5. Clothing.** Dressmaking and drafting, cutting, fitting and making of skirts, waists and dresses, measurements and drafting of patterns use of commercial patterns. Seniors. First semester. Three hours.

Prerequisite: Courses 2, 4.

**7. Hygiene.** Home nursing; care of sick room, care of patients, first aid, simple bandaging, hygienic care of the home, relation of the home to the community. Sophomores. First semester. Three hours.

**9 and 10. Household Physics.** This course is designed to provide information relative to domestic engineering by presenting: first, the general principles of the various branches of Physics; second, the household appliances based upon these principles. Classroom work is supplemented by experiments performed in the laboratory by the individual students, and by observation of the methods of installation of various appliances. Juniors. First and second semesters. Six hours.

**12. Elementary Course in Foods.** Selection and preparation of foods; their chemical composition and processes of manufacture. Laboratory work emphasizing fundamental principles of cookery. Sophomores. Second semester. Three hours.

**13. Household Management.** Care of house, choice of household equipment, and labor saving devices; apportionment of income. Juniors. First semester. Three hours.

**14. Food and Nutrition.** Food requirements at various ages in health and in certain diseases. Construction of dietaries. Invalid cookery. Juniors. Second semester. Four hours.

**16. Institutional Cookery.** Meal-planning with emphasis on the supplying of adequate diet to large groups. Attention to organization of institutional kitchen and lunchroom. Seniors. Second semester. Three hours.

**18. Teachers' Course.** Equipment of laboratories; methods of presenting work; correlation with other subjects; planning and presenting lessons. Seniors. Second semester. Three hours.

**20. Advanced Course in Nutrition.** Physiological, bacteriological and chemical problems of food and nutrition. Special work on infant nutrition. Seniors. Second semester. Four hours.

**21. Descriptive Psychology.** The first semester is given to Descriptive Psychology, in which the facts and laws of the mind are carefully studied. Juniors. First semester. Three hours.

**22. Child Psychology.** A course is also given in Child Psychology, showing the relation of mind and body, and how the ideal of a sound mind in a sound body may be attained. Special attention is given to problems arising out of family and social relations. Juniors. Second semester. Three hours.

## LATIN

Professor Ballentine

**1 and 2. Course for Beginners.** First and second semesters. Six hours.

**3 and 4. Cicero.** (Orations); **Vergil** (Aeneid). First and second semesters. Six hours.

Courses 1-2 and 3-4 are offered for those who are not prepared to pursue the regular Freshman elective.

**5 and 6. Cicero.** (De Senectute); **Pliny** (selected letters); **Roman Comedy** (two or three plays of Terence). First and second semesters. Six hours.

**7. Livy.** First semester. Three hours.

Prerequisite: Courses 5, 6.

**8. Horace** (selections). Second semester. Three hours.

Prerequisite: Course 5, 6.

**10. Roman Civilization.** Lectures, prescribed reading. Sophomores. Second semester. Three hours.

Required of students in the A.B. Course who do not elect an ancient language.

**11. Juvenal** (the principal Satires). First semester. Three hours.

Alternating with 13.

Prerequisite: Course 7.

**13. Tacitus** (Annals). First semester. Three hours.

Alternating with 11.

Prerequisite: Course 7.

**14. Plautus** (selected plays). Second semester. Three hours.

Alternating with 16.

Prerequisite: Course 8.

**16. Latin Poets** (selections). Second semester. Three hours.

Alternating with 14.

Prerequisite: Course 8.

**17. Roman Philosophy** (Cicero or Seneca). First semester. Three hours.

Alternating with 19.

Prerequisite: Course 7.

**19. Roman Law.** The course does not require a knowledge of the Latin language. Juniors and Seniors. First semester. Three hours.

Alternating with 17.

## LAW

Students who desire to secure an insight into the fundamental principles of law while pursuing their liberal studies are given an opportunity to do so. Albert W. Johnson, A.M., President Judge of the Seventeenth Judicial District, and Cloyd Nillis Steininger, A.M., Attorney-at-Law, are engaged to give instruction on the following subjects, when a sufficient number of students desire the work: Real Property, Personal Property, Contracts, Bills and Notes, Agency, and Partnership.

In addition, subjects directly bearing on law are offered in the Department of Economics and Political Science as follows: Government (Political Science 10), Politics (Political Science 11), Principles of International Law (Political Science 12). There are also offered Roman Law (Latin 19) and Elementary Law (History 15-16).

Students who intend to pursue the study of law should bear in mind that a college degree is not accepted in Pennsylvania in place of the preliminary law examination unless in securing the degree the student has met the requirements in Latin, namely, Four books of Caesar and the Four Orations of Cicero Against Catiline, or their equivalent.

## MATHEMATICS

Professor Bartol, Assistant Professor Everett and Mr. Lowry

**1. Algebra.** Freshmen. First semester. Three hours.  
Prescribed for all candidates for a degree.

**2. Advanced Algebra.** The course includes an elementary treatment of Determinants and of the Theory of Equations. Freshmen. Second semester. Three hours.

Elective for all undergraduates except those in the Engineering Courses.

**4. Analytic Geometry.** Freshmen. Second semester. Three hours.

Prescribed in the Engineering Courses: elective in all others.

**6. The Mathematical Theory of Investments.** An elementary treatment of the subject. Freshmen. Second semester. Two hours.

Elective for all undergraduates, except those in the Engineering Courses.

**7. Plane Trigonometry.** Freshmen. First semester. Two hours.  
Prescribed for all candidates for a degree.

Note—In case the Solid Geometry or the Plane Trigonometry of an accredited Secondary School is accepted in the Arts Course or in the Home Economics Course, the Mathematical Theory of Investments must be substituted in order to receive college credit.



**8. Spherical Trigonometry.** Freshmen. Second semester. One hour.

Prescribed for all candidates for a degree.

**10. Solid Geometry.** Freshmen. Second semester. Two hours.

A college subject for those not taking an Engineering course or the course in Biology.

**11 and 12. Descriptive Geometry.** The course consists in practice in elementary orthographic projection with analytical study. It is basic to Mechanical Drawing. Sophomores. First and second semesters. Two hours.

Prescribed in the Engineering courses.

**14. Descriptive Astronomy.** The course consists mainly in a study of the earth and its motions, and of the constellations. Sophomores. Second semester. Three hours.

Elective in all courses of study except those of the Engineering departments.

**15. Differential Calculus.** The theory is developed in the use of limits. Applications are freely made to the problems of Mechanics. Sophomores. First semester. Three hours.

Prescribed in the Engineering courses of study.

**16. Integral Calculus.** Frequent applications are made to the problems of Geometry, Astronomy and Physics. Sophomores. Second semester. Three hours.

Prescribed in the Engineering courses.

**17. Higher Analytics.** The course covers an elementary treatment of the geometry of three dimensions, surfaces of revolution and higher plane curves. Sophomores. First semester. Three hours.

Elective in all the general courses of study except those of the Engineering departments.

**18. Advanced Calculus.** The course includes centroid and moment of inertia problems from Mechanics, with a brief treatment of Differential Equations. Juniors and Seniors. Second semester. Three hours.

Elective to Seniors in Electrical Engineering and Mechanical Engineering, in the Arts course, and to Juniors in Chemical Engineering.

Prerequisites: Courses 15 and 16.



**19. Differential Calculus and Integral Calculus:** i. e. Courses 15 and 16. Juniors and Seniors. First semester. Three hours. Second semester. Three hours.

Elective to Juniors in the Arts and the Home Economics Courses.  
Prerequisite; Course 4.

**21. Differential Equations.** An introductory study. Seniors. First semester. Three hours.

Elective in the Arts Course.

Prerequisite: Course 4.

**22. Field Astronomy.** Observations are made chiefly with surveying instruments, and computations are made from the students' field notes. Juniors. Second semester. Three hours.

Prescribed for Civil Engineers.

**23. Practical Astronomy.** A study of text-book and of instruments in the Observatory, with some practice. First semester. Three hours.

Elective to Juniors in the Arts Course.

Prerequisite: Course 11-12.

**24. Teachers' Mathematics.** A reading course in the history and literature of Mathematics, and a study of present day methods of teaching the subject. Seniors. Second semester. Three hours.

**25 and 26. Freshman Drawing.** The work covers the use of instruments: geometrical problems: form and proportion of standard letters: methods of spacing and laying out of titles: orthographic and isometric drawings: sectioning, shading, and developments. First and second semesters. Four hours.

This course is required of all candidates for the B.S. degree except those in Home Economics.

**27 and 28. Sophomore Drawing.** The work of the first year is continued by the use of special problems for each branch of engineering. The Electrical Engineering and Mechanical Engineering students will make detailed drawings of bolts, nuts, and machine parts and also assembly drawings of complete machines. The Civil Engineering students will make detailed drawings of such structures as sewers, tunnels, bridges, and will enlarge and reduce maps. First and second semesters. Two hours.

Required in Civil Engineering, Electrical Engineering and Mechanical Engineering courses.

**29 and 30. Junior Drawing.** This course is required in the Electrical Engineering and Mechanical Engineering courses and covers the mathematical design of gears, cams, and screws, and the computations of type forms of cutting and grinding tools. First and second semesters. Four hours.

## MECHANICAL ENGINEERING

Professor Burpee

**2. Boilers and Engines.** This is a general course dealing in a concrete way with the generation and use of steam for power purposes. The course is largely descriptive and experimental; the textbook work being well supplemented by problems illustrating the subject matter.

The topics covered most fully are the analysis and combustion of fuels; types, construction and setting of boilers together with their auxiliaries. The steam engine and indicator are studied in a general way with special emphasis upon performance of the engine.

The results of the term's work are collected into a single comprehensive form by means of a series of boiler, engine and plant tests which are written up and reported in accordance with the Test Code of the American Society of Mechanical Engineers. Open to those who have taken Physics and Calculus. Text-book, Gebhardt's "Steam Power Plant Engineering", latest edition. Juniors. Second semester. Four hours.

Prerequisite: Mathematics 15 and 16, and Physics.

**3. Steam Turbines.** In this course the Steam Turbine Theory and Design are taken up in detail. A careful study is made of the principles underlying the Impulse, Reaction and Mixed Turbine. The entire field is gone over and the ideas obtained are collected and expressed by actually computing and drawing designs for two machines, one Impulse and one Reaction or Mixed Turbine. Text-book, Moyer "Steam Turbines", latest edition. Seniors. First semester. Four hours.

Prerequisite: Course 2.

**5. Steam Power Plants.** This course deals with the Power Plant as a whole. The matters receiving the major amount of attention are those pertaining to Condensers, Power Plant Auxiliaries, Piping and the general arrangement of the entire plant.

The work of the course culminates in the form of an original design completely worked out and drawings made showing floor plans

and detailed sections of all important parts. Text-book, Gebhardt's "Steam Power Plants Engineering", latest edition. Seniors. First semester. Three hours.

Prerequisite: Course 2.

**6. Steam Boiler Design.** This course is almost purely design in character and dwells upon the construction and strength of pressure vessels of various types. Complete calculations and complete detailed drawings are made for the Return Tubular, Scotch Marine and Locomotive types of boilers. Text-book, Haven and Sweet "Steam Boilers and Pressure Vessels". Seniors. Second semester. Four hours.

Required of Mechanical Engineering students.

**7. Steam Laboratory Experiments.** This course is intended to familiarize the student with the instruments and equipment belonging to the Power Plant. Experiments are made on the steam calorimeter, steam engine, indicator, boiler-feed pump, water and steam meters, pipe insulating materials, steam gauges, recording instruments and flue gas analysis. Juniors. First semester. Two hours.

Prerequisite: Physics.

**8. Heating and Ventilating.** In this course a study is made of the various methods of heating and ventilating buildings. Problems are given on the methods of calculating heat losses, removal of foul air and the introduction of fresh air.

Under Direct Heating, hot air, steam vapor and hot water systems are studied. Under Indirect Heating, attention is given to public buildings, theatres, and factories. Complete calculations and drawings for assigned buildings are required of each student. Seniors. Second semester. Four hours.

**9. Automobiles.** In this course the work taken up covers the automobile as a whole and in detail. A study is made of the passenger car, the truck and the tractor.

The text-book work is supplemented by a goodly amount of laboratory work in which cars are torn down and built up and the various parts completely analyzed. Text-book, Hobbs and Elliot "The Gasoline Automobile". Seniors. First semester. Two hours.

Open to Engineering students.

**11. Industrial Management.** This course is intended to give the student an idea of the established methods of managing industrial plants. Various systems of following up work in the plant, classify-

ing materials, keeping of records and dealing with labor are studied. Juniors. First semester. Two hours.

Required of Mechanical Engineering students.

**Visiting Plants.** While there are no definite requirements along this line there are every year several interesting and instructive trips taken by the engineering students.

During the latter part of the first semester of the Senior year the class in Steam Turbines and Steam Power Plants usually spend a week in and about Philadelphia and New York city or in the Pittsburgh district visiting plants manufacturing power machinery. When possible this trip is taken at the time of the Annual Meeting of the American Society of Mechanical Engineers so as to bring the students into touch with the engineers of the country.

In addition to this major trip several trips are made to nearby shops and industries where the students have a chance to see in a concrete way the application of the principles they are studying. It is strongly urged that as many as can, accompany these inspection trips. The expense is borne by the students themselves, but is kept to a minimum.

**10. Shop Work.** Under this head there are taught three branches: Pattern-Making, Foundry, and Machine Shop Practice. The work runs through the second semester of the Freshman Year and the entire Sophomore Year. The work is carried only so far as is considered necessary in order to give the student an intelligent idea as to how machinery and other articles manufactured from metals are made. No attempt is made to turn out finished mechanics, but it is considered desirable that the engineer to some extent understand the work of the mechanic.

**11. Pattern Making.** In this course it is assumed that the student is familiar with the use of wood-working tools. The work starts with the principles involved in the building of actual patterns. Allowances for draught, shrinkage, and machining are taught and the student builds patterns which he afterwards uses in the Foundry.

The course is taught throughout the year, but must be taken at the same time with the course in Foundry. The two are worked together and carry a credit of two semester hours.

**12. Foundry Work.** In this course a study is made of the composition and uses of molding sands and other materials used about the Foundry. Green sand molds, both with and without dried cores, are made and poured. The principles of tamping, venting, gating and the

various methods of delivering the pattern from the mold are studied. Attention is given to the construction, operation, and care of the cupola. The student is taught to make the molds, charge the cupola and pour his own flasks.

The course is taught throughout the year, but must be taken at the same time with the course in Pattern Making. The two are worked together and carry a credit of two semester hours.

**13. Machine Shop, General Course.** In this course the student is taught the mathematical principles of the lathe and similar machines. He is also taught how to operate the lathe, planer, shaper, milling machine and the drill press.

The lathe work starts with plain cylindrical work and advances through tapers, thread-cutting and making of cut gears. After this work is mastered the student is given instruction in laying out and other operations on the table and bench and finally he does some assembling.

The shop practice is supplemented by lectures and problems.

The course runs throughout the year and is required for one semester of all Engineering students. Two hours.

**14. Machine Shop, Advanced Course.** This course is required of the Mechanical Engineering students only and is very general in character. There is no definite outline for the work, but each student is assigned such pieces to work on as his particular need may require. In many cases the piece is a repair for some bit of machinery about the University.

The course is intended to carry to a more practical point the work of the general course. Students in this course are sometimes asked to assist instructing those in the more elementary course. Sophomores. Second semester. Two hours.

## MILITARY SCIENCE AND TACTICS

Professor Morris

The object of this course is to train students to become second Lieutenants of the Reserve Officers' Corps, U. S. Army. Course open to all physically fit male students over 14 years of age, who are citizens of the United States and who are not members of the Organized Militia or Naval Reserve.



## BASIC COURSE

1. The basic course comprises the first two years of instruction in the Department of Military Science and Tactics with instruction at one summer camp (voluntary) of about six weeks' duration. The camp instruction comes preferably after the Freshman year.

2. The basic course covers the instruction necessary for the training of the student in the duties of a private and non-commissioned officer and for the elementary training of an officer.

3. The completion of the basic course when entered upon by any student shall, as regards such student, be a prerequisite to graduation. Attendance at the Basic Camp is not a prerequisite to graduation.

## ADVANCED COURSE

1. The advanced course is open only to those students who have successfully completed the basic course. Members of the advanced course execute a written agreement with the government to pursue the advanced course till they graduate (not more than two years) devoting five hours per week thereto and to attend one summer camp. After executing the agreement the students of the advanced course receive about \$125.00 per year.

2. The advanced course will comprise the last two years of instruction in the Department of Military Science and Tactics with instruction at one summer camp (compulsory) of about six weeks' duration. The camp instruction comes preferably after the Junior year.

3. The advanced course will cover the instruction necessary for the training of the student in the duties of a commissioned officer.

## NOTES

1. All new students desiring to elect military science must take a physical examination at Lewisburg, Pa. The cost thereof is about 50 cents.

2. Students will be furnished free a new uniform each year, costing the government about \$40.00. The uniforms always remain the property of the United States. Uniforms must be worn during hours of instruction; at other times it is optional.

3. Travel and subsistence to camp and return are free. Subsistence, clothing, etc., while at camp, are also free. The summer camp is generally held at Camp Devens, Massachusetts.

4. Students who complete the course receive from the government about \$160.00 in uniforms and about \$250.00 in cash, exclusive of



travel to summer camp and expenses while there, besides a commission in the Reserve Officers' Corps U. S. Army. The students receive from the college for the course 12 units, which may be counted in the 128 units required for graduation. The course in military science may be elected in any course, and substituted for other elective subjects, where allowed in the conspectus.

5. Students pursuing the course in military science and tactics are not required to take physical training.

6. Students pursuing the course in military science and tactics are not considered as enlisted and have the same liberties as any other students. They may leave college, go on vacations, etc. The course in military science and tactics is on the same basis as any other course.

## PHILOSOPHY

Professor Harris

The studies in this department embrace Psychology, Philosophy, and Ethics.

1. **Psychology, Descriptive and Explanatory.** First semester. Four hours.

Required of Juniors for A.B. degree.

2. **Abnormal Psychology.** Lectures, text-book, readings, and thesis. Second semester. Three hours.

**Physiological and Experimental Psychology.** (Biology 31). Professor Davis.

4. **Philosophy of Mind.** Juniors and Seniors. Second semester. Three hours.

6. **History of Philosophy.** Text-book and Lectures. Second semester. Two hours.

Required of Juniors for A.B. degree.

**Roman Philosophy.** (Latin 17). Professor Ballentine.

8. **Ethics.** Second semester. Three hours.

Required of Juniors for A.B. degree.

9. **Ethics of Plato and Aristotle.** Study of the Republic and Nicomachean Ethics, with collateral readings and thesis. Juniors and Seniors. First semester. Three hours.

11. **History of Recent Philosophy.** Darwin, Spencer, and James. Juniors and Seniors. First semester. Three hours.

## PHYSICS

Professor Simpson and Mr. Hall

**1 and 2. General Physics.** This course is designed as a culture course and is arranged for students who desire a general knowledge of Physics in its relation to everyday life. The work in the class room demands only a thorough knowledge of Mathematics as covered in the entrance requirements. The laboratory work covers the whole field of Physics but no elaborate quantitative experiments are undertaken. Students who desire to teach Physics should supplement this course with courses 3 and 4. It does not meet the requirements for entrance to medical schools. First and second semesters. Six hours.

**3 and 4. Physics.** Mechanics, Sound, Heat, Light, Magnetism, Electricity.

This course is designed to meet the requirements for later work in the technical courses. It is required in all the engineering courses and presupposes that the student has passed the mathematics required in these courses. It is accepted for entrance by the best medical schools.

The instruction consists of lectures, recitations and laboratory work. All important phenomena are illustrated and experimental demonstrations of the principal laws are presented.

The laboratory work includes experiments illustrating the general laws in all branches of Physics. The experiments are largely quantitative and use is made of instruments of precision. The work is entirely individual, the student taking notes in the laboratory which are elaborated outside and presented for criticism. First and second semesters. Ten hours.

## ADVANCED COURSES IN PHYSICS

The following courses are designed primarily for engineering students, but are open to students who have completed course 3-4 or its equivalent and who have passed two semesters of the Calculus. They are of such a nature that a student who has successfully completed them will be fitted for graduate work in the best Universities and Technical schools.

**5. Electrical Measurements.** In this course the student is required to make a careful study of the instruments of precision used in electrical testing laboratories for the measurement of current, E. M. F. resistance, capacity and inductance. A careful study is

made of the standard cell and primary and secondary batteries. An exhaustive study is made of the magnetic behavior of iron. First semester. Five hours.

**6. Heat and Light.** The theory covering the first and second laws of thermodynamics and a large number of problems are studied in the classroom. The laboratory work covers the mechanical equivalent of heat; calorimetry, in which the heat value of solid, liquid and gaseous fuels is determined; a careful study is made of electrical methods for measuring temperature. In Light, the student becomes familiar with the spectrometer, spectroscope, interferometer and photometer. Students in Chemical Engineering are required to map emission spectra, study the arc and spark spectra of solids, the spark and flame spectra of liquids and gases, and the absorption spectra of mixtures and coloring materials. Students in Electrical Engineering are required to make a careful study of the efficiency of the various types of electric lamps.

All work in the laboratory is supplemented by written reports in which both general and theoretical results obtained are discussed. These reports afford the basis for criticism of the work. Second semester. Five hours.

## ROMANCE LANGUAGES

Professor Griffith, Miss McClure, Mr. Seebach, and  
Mrs. Rockwell

### FRENCH

**1. Elementary Course.** Grammar, easy reading, practice in writing French. First semester. Three hours.

**2. Grammar, Reading, Practice in Writing French.** Second semester. Three hours.

**3. French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Increasing use of French as the language of the classroom in this and succeeding courses. First semester. Three hours.

**4. French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Second semester. Three hours.

**5. (a) Literature of the Seventeenth Century.** First semester. Three hours.

**5. (b) History of French Literature.** Advanced composition. First semester. Three hours.

6. (a) **Literature of the Seventeenth Century, continued.** Second semester. Three hours.

6. (b) **History of French Literature, continued.** Advanced composition. Second semester. Three hours.

7. (a) **Eighteenth and Nineteenth Century Authors.** Romanticists and Realists. First semester. Three hours.

7. (b) **French Civilization.** Rapid reading, lectures, reports. First semester. Three hours.

8. (a) **Present Day French Writers.** Second semester. Three hours.

8. (b) This course is arranged especially for those preparing to teach French. Second semester. Three hours.

Open only to those who have completed Course 7a or 7b.

## SPANISH

1. **Grammar, Composition, Easy Reading.** First semester. Three hours.

2. **Grammar, Composition, Reading.** Increasing use of Spanish as language of classroom in this and succeeding courses. Second semester. Three hours.

3. **Advanced Course.** Selected authors. Practice in writing Spanish. First semester. Three hours.

4. **Continuing Course 3.** Selected authors. Practice in writing Spanish. Second semester. Three hours.

## SOCIOLOGY AND LOGIC

Professor Martin

2. **Anthropology, Descriptive and Physical.** Sophomores. Second semester. Three hours.

3. **Logic, Deductive and Inductive.** Juniors. First semester. Three hours.

4. **Municipal Sociology.** Juniors and Seniors. Second semester. Three hours.

Alternating with Course 6.

6. **Scientific Method, Principles and Analysis.** Juniors and Seniors. Second semester. Three hours.

Alternating with Course 4.

7. **Sociology, Principles and Theory.** Juniors and Seniors. First semester. Three hours.

## SURVEYING

Professor Drum

**1. Plane and Topographical Surveying.** Recitations on text, lectures, tests, field practice in each position on corps using transit, Y, dumpy and hand levels, plane table and compass in surveys for area, for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments.

Civil Engineering Course. Sophomores. First semester. Five hours.

**2. Geodetic Surveying.** Recitations on text, lectures, tests, readings and reports from literature of the U. S. C. G. S. and other sources.

Civil Engineering Course. Sophomores. Second semester. Two hours.

**4. Railroad Surveying.** Recitations on text, lectures, tests. Computation, draughting and field practice of simple, compound and spiral curves. Field practice in each position on corps making a preliminary survey for a cross-country railroad. Computations and draughting for determining paper location, including grades, excavation, vertical curves, questions of haul, etc. Field practice in putting in paper location and setting slope stakes. An inspection of portions of the Reading and Pennsylvania tracks in a study of switches, Y's, and crossings.

Civil Engineering Course. Sophomores. Second semester. Five hours.

**5. Mine Surveying.** Problems in Mine Surveying, such as plumbing the shaft, location of borehole, lining up chambers, driving tunnels, are worked out in class and with the instruments. Plotting of notes forms a part of the work.

**City Surveying.** The common problems incidental to city engineering are considered, field work, notes, reports, drawing specifications, and estimates being required. Juniors. First semester. Three hours.

**6. Surveying.** Course for technical students not of the Civil Engineering Course. Recitations on text, lectures, tests. Field practice in the care, adjustment and use of surveying instruments, in surveys for area, topography, curve location, setting grade stakes, building location, foundations for machinery, etc. Computations and maps. Seniors. Second semester. Three hours.



## PHYSICAL EDUCATION

## MEN

The Tustin Gymnasium has been provided for the physical training and development of young men. This is now provided with the apparatus usually found in well-furnished gymnasiums. The Director of the Gymnasium examines every student, taking and recording in a book his physical measurements, and prescribes such exercise as may be required for his physical development. Regular exercise in the Gymnasium is required of the Sophomores and Freshmen.

## WOMEN

Physical training is required of all women in the College and of all music students who live at Women's College. The course aims to give systematic, progressive exercises which tend to better the health of the students, and to give them grace and muscular co-ordination. Swedish gymnastics, calisthenics, light apparatus work, folk-dances, and games are taught in four half-hour periods each week.

The gymnasium is equipped with wands, dumb-bells, rings, Indian clubs, pulley weights, Swedish boom, and flying rings. There are basketball and volleyball courts and equipment for indoor baseball. Outdoor sports are taught and encouraged, including tennis, skating, and swimming.

All women are given two physical examinations each year to discover any physical weakness and to prescribe individual exercises to be practiced each day. There is ample equipment in the gymnasium for these examinations.



# EXPENSES OF STUDENTS PER SEMESTER

## Men

Unfurnished Room, including tuition, heat, light and student budget .....	\$111.00
Furnished Room, including tuition, heat, light and student budget .....	126.00
Students not residing in the dormitories .....	96.00
Corner rooms and double rooms, per semester, extra .....	3.00

## Women

Tuition, board and room, including heat, light and student budget .....	\$226.00
Students not residing in the dormitories .....	96.00
Rooms in Bucknell Cottage and New Residence Hall, per semester, extra .....	7.50

## FEES

### Biological Department

Bacteriology (1) .....	\$10.00
Bacteriology (2) .....	10.00
Biology (Home Economics) .....	5.00
Botany (1) .....	5.00
Botany (2) .....	5.00
Entomology .....	5.00
Geology (1) .....	5.00
Geology (2) .....	5.00
Human Anatomy .....	\$10.00 to \$20.00
Microscopic Anatomy (1) .....	10.00
Microscopic Anatomy (2) .....	10.00
Osteology .....	5.00
Physiology (1) .....	5.00

Physiology (2) .....	10.00
Zoology (1) .....	10.00
Zoology (2) .....	10.00

### Chemistry Department

Descriptive Chemistry (1) .....	\$5.00
Descriptive Chemistry and Qualitative Chem- istry (2) .....	10.00
Chemistry of Foods .....	5.00
Agricultural Chemistry .....	5.00
Metallurgy .....	5.00
Quantitative Chemistry .....	15.00
Inorganic Chemistry .....	15.00
Physical Chemistry .....	15.00
Deposit Fees .....	10.00

### Engineering Department

Physics (1) .....	\$3.00
Physics (2) .....	4.00
Electrical Measurements .....	5.00
Advanced Physics .....	5.00
Direct Current Machinery .....	5.00
Alternating Machinery .....	5.00
Telephones and Telegraphy .....	5.00
Boilers and Engines .....	4.00
Shop Work .....	6.00
Steam Laboratory Experiments .....	4.00
City and Mine Surveying .....	5.00
Plane and Topographical Surveying .....	5.00
Railroad Surveying .....	5.00
Surveying for Technical Students (non civil) .....	5.00

### Home Economics

Cookery .....	\$5.00
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### Miscellaneous

Diploma and Graduation Fee .....	\$15.00
Diploma, Master's Degree .....	15.00

Special Examinations .....	5.00
Delayed Registration .....	3.00
Changed Registration .....	1.00
Making up unexcused absences .....	.50
Extra Hour .....	5.00

### Extra Hour

For each semester hour in excess of the minimum requirement of sixteen hours, a special fee of five dollars is charged when the extra hour is counted towards the one hundred and twenty-eight hours required for graduation or toward a Master's Degree. This regulation applies to students in the A.B. course and also to students in the B.S. course when hours in excess of an average of sixteen each semester are counted toward graduation in less than four years, or toward a Master's Degree.

### Room Deposit \$10.00

This amount is credited upon the bill of the first semester. Should a student for good reason be unable to enter or return, the deposit will be refunded, provided notice is sent to the Registrar not less than four weeks before the opening of the semester for which the room is engaged.

ALL BILLS ARE PAYABLE within the first TEN DAYS of the opening of the semester. Checks should be made payable to the order of Bucknell University and addressed to the office of the Registrar.

Any student who withdraws voluntarily while in good standing not more than two weeks after the opening of the semester shall be entitled to a refund of ninety per cent of his fee.

Any student who withdraws voluntarily while in good standing after having been in attendance more than two weeks shall be charged for two weeks in excess of time actually enrolled.

No refund is made to any student who is requested to withdraw on account of conduct or poor scholarship.

An unfurnished room, (men) contains a bed 6' x 3'.

A furnished room, (men) contains a bed 6' x 3', a mattress, two sheets, counterpane, pillow, pillow case; wardrobe, washstand, table, two chairs, and a rug. The room is cared for and bedding laundered.

A furnished room, (women) contains a bed 6' x 3', mattress, bureau, wash stand, wardrobe, table, two chairs and a rug.

# GENERAL REGULATIONS

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## Attendance

Regular attendance is required upon all prescribed work in a student's course of study and at the Chapel exercises. Absences, in excess of a limited number, necessarily affect the class standing of a student. The details of the regulations in regard to absences are prescribed by the Faculty Committee on Attendance and Standing.

## Standing

The standing of a student in each course is computed on a scale of 100 and is so reported to the Dean's Office. The report, which is sent to parent or guardian, is recorded by use of the letters A, B, C, D, E, and F. A, signifies a standing from 90 to 100; B, signifies a standing from 80 to 89; C, signifies a standing from 70 to 79; D, signifies a standing from 60 to 69; E, signifies a standing from 50 to 59 and a **condition**; F, signifies a failure.

## Degrees With Distinction

The Degree of Bachelor of Arts or of Bachelor of Science **with distinction** is awarded as follows:

Cum Laude. A candidate is recommended for a degree Cum Laude who has obtained a grade of "A" in one-half of his courses.

Magna Cum Laude. A candidate is recommended for a degree Magna Cum Laude who has obtained a grade of "A" in three-fourths of his courses.

Summa Cum Laude. A candidate is recommended for a degree Summa Cum Laude who has obtained

ed a grade of "A" in seven-eighths of his courses and who has been in residence at Bucknell University at least three years.

### Examinations

The dates of the examination are given in the Calendar. In case a student fails to be present at the examination of his class, for any justifiable reason, his examination will be held at such time as the Faculty may appoint, but in no case is an examination granted a student in advance of the time appointed for the examination of the class.

Unless for very good reasons to the contrary, a student who is granted a special examination will be required to pay a fee of five dollars therefor.

### Public Worship

The College holds religious service in Bucknell Hall. The student body is divided into two sections; each section meets twice a week.

The Women's College holds also an evening service in the Main Building of the Women's College.

### Government

It is assumed that all who enter upon the courses of study in the College do so for the purpose of acquiring an education. The atmosphere of the institution is not that of arbitrary restraint, but of reasonable conformity to reasonable requirements. The College does not wish to place its stamp or bestow its honors upon any one who is not willing to deport himself as a gentleman. Each student is distinctly placed upon his manhood, and if he abuses his privileges, after reasonable caution, he must withdraw from the institution, at the request of the President. Consistent with this ideal the students, with the sanction and cooperation of the Faculty, have organized the



Senior Council composed of the young men and the Student Government Association composed of the young women. Their function is to cooperate with the Faculty in maintaining the traditions and good order of the College both on and off the campus.

### **President's Office Hours**

The President of the University is in his office in the Main College building each morning from nine to ten, if possible. Students are at liberty to call upon him at his home at any time.

### **Dean's Office Hours**

The Dean is in his office in the Main Building each afternoon from two to three thirty.

### **Office Hours of the Dean of Women**

The Dean of Women will meet in her office College women who may desire advice or assistance from her.

## PRIZES

The prizes are awarded to the persons who in the judgment of the several committees attain the highest degree of excellence among the respective competitors, but no prize is bestowed unless a high degree of merit has been attained by the person receiving it.

### The Prize of the Class of '71

This prize, established by the Class of 1871, is awarded to the student of the Freshman Class who shall prove himself best prepared for College in the two branches, Latin and Mathematics.

The prize for 1919 was awarded to Edna May Follmer.

### The Freshman Declamation Prize

A prize is awarded to the member of the Freshman Class who shall excel in declamation at the Annual Contest of the Freshman Class.

The prize for 1919 was awarded to Karl Krug.

### The Sophomore Prize in Public Speaking

A prize is awarded to the member of the Sophomore Class who shall excel in public speaking at the Annual Contest of the Sophomore Class.

The prize for 1919 was awarded to David Hobart Evans.

### Declamation Prizes for Women

Prizes for the best declamation are open for competition to the Sophomore and Freshman Classes. The prize for the Freshman Class was awarded, in 1919, to Marie Chambers.

The prize for the Sophomore Class was awarded, in 1919, to Charlotte Volkmar.

### **The Registrar's Prize**

The Registrar of the University offers a prize to that member of the Junior Class who shall pronounce the best oration at the Junior Exhibition in Oratory.

No exhibition was held in 1919.

### **The Junior Debate Prize**

No Junior debate was held in 1919.

### **The Herbert Tustin Prize**

In memory of his deceased son, the late Professor Francis Wayland Tustin, Ph.D., of the Class of 1856, paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Tustin Prize Fund, the interest of which is to be forever paid annually as two prizes, in the proportion of fifteen dollars for the First Prize, and ten dollars for the Second Prize, to the two students of the Senior Class who shall have attained the highest and the second highest standing in Psychology and Ethics (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception".

The first prize was awarded in 1919 to William Jennings Bryan Bloom, and the second to Catherine Gehrett Thompson.

### **The Herbert Goodman Barrows Prize**

In memory of his son, the Reverend William Barrows, A.M., of the Class of 1867, paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Goodman Barrows Prize Fund, the interest of which is to be forever paid annually as two prizes of equal amounts to the student or two students of the Senior Class who shall have attained the highest standing, respectively,

in the Latin and in the Greek language and literature (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception".

The prize for excellence in Latin was awarded in 1919 to Susannah Dunkle Grove. The prize for excellence in Greek was awarded in 1919 to Harold Dickinson Germer.

### **The Chaplain J. J. Kane Prize**

The Reverend James J. Kane, A.M., Chaplain in the United States Navy, and a graduate from the Theological Department of this University, of the Class of 1867, has established a prize which is to be given annually to that member of the graduating class who delivers the best oration on Commencement Day.

The prize was awarded in 1919 to James Russell Herman.

### **The Bucknell Prizes for Women**

The following prizes for women were founded by William Bucknell, of Philadelphia.

1. A Senior Prize to be awarded to the member of the graduating class of the College, who shall attain the highest grade in the studies of the four years' College Course.

Awarded in 1919 to Alice Carey Ferris.

2. A Senior Prize, to be awarded to the member of the graduating class who, being excellent in scholarship during the Senior Year, shall prepare the best essay.

Awarded in 1919 to Agnes Carswell.

3. A Junior Prize, to be awarded to the member of the Junior Class, who, being excellent in scholarship during the Junior Year, shall prepare the best essay.

The prize in 1919 was awarded to Margaret Helen Trump.

4. A Sophomore Prize, to be awarded to the member of the Sophomore Class who, being excellent in scholarship during the year, shall prepare the best Sophomore essay.

Awarded in 1919 to Emma Magdalena Fuhrer.

5. A Freshman Prize, to be awarded to the member of the Freshman Class who, being excellent in scholarship during the year, shall prepare the best Freshman essay.

Awarded in 1919 to Mary Elizabeth Appleman.

The fund consists of \$2,000, the income from which is to be devoted to these prizes annually in a manner more particularly defined in the donor's communication to the Trustees.

Themes for the Bucknell Essay Prizes will be drawn from works which will be announced by the Professor of Rhetoric each year.

## SCHOLARSHIPS

**General Rules.** Scholarships under the control of the University are held subject to the following rules:

1. Application for a scholarship for any college year should be made before the first of June preceding.

2. Scholarships are held subject to semi-annual renewal, the renewal being conditional upon the maintenance of an average grade of 80, the continuance of good behavior, and the assurance of continued financial need.

3. Credit for half the amount of the scholarship is given at the beginning of each semester upon presentation at the Registrar's office of a voucher signed by the President of the University.

The following scholarships are at the disposal of the Permanent Committee on Scholarships, consisting of the President, the Dean, and the Registrar:

1. **The William Bucknell Scholarships**, twenty in number and of \$1,000 each, were established for the purpose of aiding worthy young men in securing an education with which to increase their usefulness in life. The income from the fund is to be paid annually to twenty young men, in accordance with rules which will be made known upon application to the Committee.

2. **The Ministers' and Missionaries' Children Scholarships** are established upon the general foundation for the benefit of the children of ministers and missionaries of all denominations, in active service.

3. **The Longan Scholarship**, established from a legacy of O. W. Longan, Esq., is available for a student for the ministry from Lycoming County, Pennsylvania.



4. **The Lewis E. Jones Scholarship** was established from a legacy of the late Lewis E. Jones for a student of Welsh descent.

5. **The John Howard Hare Scholarship**, established by the Reverend Calvin Aurand Hare, A.M., in memory of his son, John Howard Hare, is available for a student for the ministry upon recommendation of The Pennsylvania Baptist Education Society and the President of the University.

6. **The Velola E. Hall Scholarship**, established by the Reverend Henry Chandler Hall, A.M., Class of 1882, in memory of his daughter, Velola E. Hall, A.B., Class of 1904, is available for a student in the Women's College.

7. **The William V. Wilson Scholarships**, two in number, were established in memory of the Reverend William V. Wilson, D.D., of New Jersey.

8. **The Esther Owens Scholarship** has been founded by a gift of Miss Esther Owens.

9. **The William A. Cook Scholarship** has been founded by a gift of William A. Cook.

10. **The Service Scholarships**, twenty-five in number, are maintained on the general foundation. These provide fifty dollars each, in return for which clerical work is required to the amount of the scholarship.

11. **The DuPont Scholarship** is granted annually to a senior student in Chemical Engineering designated by the Professor of Chemical Engineering.

Besides these, the following scholarships are granted as stated:

12. **The Livingston Scholarships**, twenty-two in number, were established from a legacy of M. B. Livingston, and are available for students for the ministry designated by the Pennsylvania Baptist Education Society.

13. **The Weaver Scholarships**, established with a fund of \$10,000, the gift of Colonel Joseph Kerr Weaver, A.M., M.D., Class of 1861, were named by action of the Board of Trustees in honor of Doctor and Mrs. Joseph K. Weaver. The holders are designated by Dr. Weaver.

14. **The Philadelphia Alumnae Scholarship** was founded by the Philadelphia Alumnae Club, and is available for a woman student from Philadelphia designated by the Club.

### **The Loan Fund for Women**

In June, 1887, there was organized a society for the purpose of assisting young women of limited means to obtain an education. A fund was established by gifts from Alumnae and friends, and is controlled by an Executive Board.

The money is loaned to worthy young women who obligate themselves to return it without interest as soon after graduation as they may be able.

Applications for loans should be made to the Executive Board before the opening of each semester. No loans are granted until the applicant has been a student in the College for at least one semester.

Contributions to the Fund are solicited and should be sent to the Treasurer, Mrs. J. T. Judd, Lewisburg, Pa. A contribution of one hundred dollars constitutes the donor a Life Member of the Society.

Information will be given by the President, Mrs. Katherine B. Larison, Lewisburg, Pa., or by the Secretary, Mrs. Llewellyn Phillips, Lewisburg, Pa.

# COLLEGE ACTIVITIES

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## REGULATIONS

The College encourages and directs all activities consonant with the normal life of college students. The Faculty, therefore, has appointed a committee on student activities and has defined its duty to be:

(1) to supervise the accounting and to audit the accounts of all college organizations, non-fraternity in nature, that collect and disburse funds and whose management is not controlled by the Board of Trustees,

(2) to pass upon the scheduling of all public activities of organizations of the College not controlled by the Board of Trustees and to pass upon the scholastic eligibility of students participating in all public activities.

The treasurer of any college organization, class or committee is required to submit his accounts for audit to the committee at least once a year or as frequently as requested by the committee.

Before any public activity of those student organizations under the jurisdiction of the committee on student activities is scheduled, application for permission and a date must be made in writing to the committee. The committee on student activities has the right to prohibit a student from participating in any public activity whenever, in the opinion of the committee, such participation is detrimental to his college work.

## ATHLETIC ASSOCIATION

The Athletic Association of the College has been formed to encourage and regulate athletic sports. Consider-

able liberty is allowed the Association, in carrying out its purpose. The Association is not allowed, however, to arrange match games with other similar bodies without having secured the consent of the Faculty. Subject to the control of the Faculty, the general management of athletics is in the hands of a committee consisting of the President of the Athletic Association, the President of the University, ex-officio, two faculty members chosen by the Faculty or appointed by the President of the University, and four Alumni chosen by those members of the Alumni Association who are members of the Athletic Association at its annual meeting in June each year.

### **CHRISTIAN ASSOCIATION**

The Young Men's Christian Association aims to maintain religious ideals and to promote religious knowledge among the men of the College. It holds regular devotional meetings and conducts Bible and mission study classes.

The Young Women's Christian Association holds regular meetings on Tuesday evenings. It aims to maintain a religious atmosphere in the Women's College and it also conducts Bible and mission study classes.

### **CLASS ORGANIZATION**

Each class is organized with a president and the other usual officers. The classes meet for the election of officers on the first Friday of the College year at three o'clock in the afternoon. The officers thus elected serve for one year or until their successors qualify.

### **DEPARTMENT CLUBS AND SOCIETIES**

Students who intend to pursue law have organized a Law Club. The medical students have organized a Medical Society. Other departments have similar organiza-

tions. The Civil Engineering, the Chemical Engineering, the Electrical Engineering, and the Mechanical Engineering students have their respective societies. The last two are branches of national societies and hence local members are accorded the privileges of the national bodies. All these organizations hold regular meetings. Members present original papers and at times lecturers of prominence address the societies.

### DRAMATIC, LITERARY, AND MUSICAL ORGANIZATIONS

The young women of the College have established the Frill and Frown, the young men the Cap and Dagger. Both of these dramatic organizations present each year at least one play.

There is also an association for the promotion of Inter-collegiate Debating.

The Glee Club consists of young men selected by the Professor of Music. It holds regular rehearsals and gives concerts at the University and in adjacent cities. During the vacations it makes tours.

### FRATERNITIES

No student is permitted to join a fraternity until he has received a certificate from the President of the University, under seal, that he has been a student for one year in the College, that he has completed one year's work and that his conduct has been satisfactory.

### STUDENT PUBLICATIONS

The students of the College publish a weekly paper, the Bucknellian, also a daily Commencement News during Commencement Week. The Junior Class publishes every year an annual, L'Agenda.

# SIXTY-NINTH ANNUAL COMMENCEMENT

Tuesday, June 24, 1919

Inauguration of President-Elect, Emory William Hunt, D.D., LL.D.

Presiding Officer, Honorable Ernest L. Tustin, LL.D., Philadelphia.

Prayer, the Reverend Carter Helm Jones, D.D., LL.D., Pastor of the First Baptist Church, Philadelphia.

Induction of the President-Elect on behalf of the Board of Trustees, George Morris Philips, Ph.D., LL.D., Principal of West Chester State Normal School.

Inaugural address.

Addresses of greeting:

On behalf of the Faculty,  
Professor Enoch Perrine, LITT.D.

On behalf of the Alumni  
Milton G. Evans, D.D., LL.D., President of  
Crozer Theological Seminary.

On behalf of the Undergraduates  
Alice Ferris, Philadelphia  
James Russell Herman, Edwardsville.

On behalf of the Institutions of Higher Education  
Samuel B. McCormick, LL.D., Chancellor of  
the University of Pittsburgh.



## SIXTY-NINTH ANNUAL COMMENCEMENT

Tuesday, June 24, 1919

## HONORS AT GRADUATION

## Orations Summa Cum Laude

Edwin Ewart Aubrey	Alice Carey Ferris
James Russell Herman	

## Orations Magna Cum Laude

Harry Herman Angel	Voris Blaine Hall
William Jennings Bryan Bloom	Howard LaVerne Harer
DeWitt Kieffer Botts	Franklin DeLaVerne Jones
Mary Marguerite Downer	Chester Robert Leaber
Agnes McDowell Gilmour	James William Lowry
Susannah Dunkle Grove	Catherine Gehrett Thompson
Clyde Earl Russell Wenrich	

## Orations Cum Laude

Margaret Elizabeth Allen	Marion Elinor Hyatt
Warren Foster Brooks	George Frederick Jammer
Robert Gonzales Carulla	Raymond DeWitt Kline
Agnes Carswell	Raymond Plank Lewis
Golda Clark	Charles William Mitchell
Raymond John Cornish	Margaret Salome McLaughlin
Ernest Judson Cruse	Thomas Maurice Orchard
Margaret Mary Finerty	Elizabeth McLean Paterson
Jean Olga Flanagan	Paul E. Sandel
David Christian Gall	Elizabeth Fairchild Spyker
Lloyd Loy Garner	Annette Amelia Stahl
Irene Elsie Gossweiler	Ruth Stein
Mary Edna Grove	Dorothy Marie Thompson
Helen Roberta Hoffa	Benjamin James Wilson
Jennings Howard Hornberger	Raymond A. Witchey

## DEGREES CONFERRED PRO MERITO

Tuesday, June 24, 1919

## A. DEGREES IN ARTS

## I. Master of Arts

Hulda Houston Arthur	Jessie Irene Potts
Helen King Bartol	Walter Bodine Pimm
Eunice Virginia Hall	Jesse Earle Riley
James Russell Herman	Charles Loy Sanders
Frank Hollingshead	Ira Sankey Shephard
Harry Xing Kelly	Richard J. Wagenseller Templin
Margaret McClure	Charles Eugene Tilton
Olive Ewing Moore	Louis Nicholas Tripician
Eric Adam Oesterle	John Frederick Winkelblech

## II. Bachelor of Arts

Margaret Elizabeth Allen	Madonna Harris
William Jennings Bryan Bloom	Paul Elmer Hartman
DeWitt Kieffer Botts	James Russell Herman
Margaret Jane Buck	Helen Roberta Hoffa
Agnes Carswell	Marion Elinor Hyatt
Florence Adelaide Cleary	Everett Thomas Jones
Raymond John Cornish	Dorothy Beaumont Lawrence
Ernest Judson Cruse	Raymond Plank Lewis
Ruth Evelyn Farquhar	Charles William Mitchell
Margaret Mary Finerty	Ruth Adelia Minnig
Jean Olga Flanagan	Kenneth Wilson Oakley
Harold Dickinson Germer	Elizabeth McLean Paterson
Agnes McDowell Gilmour	Ruth Stein
Irene Elsie Gossweiler	Dorothy Marie Thompson
Susannah Dunkle Grove	Helen Gladys VanDyne
	Raymond A. Witchey

## III. Bachelor of Philosophy

Edwin Ewart Aubrey	David Christian Gall
Alden Eugene Davis	Raymond DeWitt Kline
	Frank Wesley Rorabach

## B. DEGREES IN SCIENCE

## I. The Second Degree in General Science

Peter Bodine Cregar	Levi Lore Riffin
Fayette Clinton Eshelman	Marion Ellsworth Sayre
Nerissa Dagmar James	Joseph Pardoe Shearer
Robert Benjamin Leighou	George Salvadore Stevenson

## II. The First Degree in General Science

Samuel Abrams	Charles Bunnell Kreitner
Warren Foster Brooks	Chester Robert Leaber
Mary Evelyn Bright	James William Lowry
Golda Clark	James Kane Petite
Alice Carey Ferris	Frank Heilman Riale
Irene Jemima Fritz	Karl David Smith
Weber Latcha Gerhart	Ernest Frederick Sonder
Meta Frances Haldeman	Elizabeth Fairchild Spyker
Clifford Ambrose Holleran	Annette Amelia Stahl
Marjorie Rebecca Kostenbader	Catherine Gehrett Thompson
Emma Irene Yarnall	

## III. The First Degree in General Science—Household Economics

Mary Edna Grove	Margaret Salome McLaughlin
Naomi B. Lane	Mary Matilda McLaughlin

## IV. The Second Degree in Biological Science

John Herbert Waite

## V. The First Degree in Biological Science

Mary Marguerite Downer	Jennings Howard Hornberger
Arthur Johnson Greenleaf	Raymond Deily Tice

## VI. The Second Degree in Electrical Engineering

Earl Morgan Richards	Fred Oscar Schnure
James Ralph Irwin	

## VII. The First Degree in Electrical Engineering

Charles Joseph Anchor	Voris Blaine Hall
Harry Herman Angel	William Frederic Holsing

## VIII. The First Degree in Chemical Engineering

Emerson Collins Cupp	Frank Ames Lawrence
Lloyd Loy Garner	Paul E. Sandel
Franklin DeLaVerne Jones	George Allen Starkweather

## IX. The First Degree in Civil Engineering

Howard LaVerne Harer	Rexford Ervin Stone
Clyde Earl Russell Wenrich	

## X. The First Degree in Mechanical Engineering

Robert Gonzales Carulla	Thomas Maurice Orchard
George Frederick Jammer	Howard Reading Pars
George Merrill Kunkel	Benjamin James Wilson
Clyde William Withington	

## DEGREES CONFERRED HONORIS CAUSA

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**Doctor of Laws**

John Warren Davis	Harold Murray McClure
Oliver Booth Dickinson	

**Certificates in Domestic Science**

Sarah Elizabeth Adams	Lottie Noreene Dietz
Helen Scheidy Beck	Edith Larson
Mary Lincoln Carey	Freda Crowl Mackereth
Barbara Helen Coe	Euphemia Muir
Marguerite Nancy Coe	Lulu May Tompkins
Ella LaRue Unger	

**Certificates in Elocution**

Margaret Irene Brown	Beatrice May Fetterman
Clara Margaret Casner	Edith Miller
Emily Kathryn Devine	Ruth Adelia Minnig
Elizabeth Fairchild Spyker	

**Diplomas in Music**

Harry Fortner Andrews	Gladys Grace Hackenburg
Leo Balistreri	Ruth Arlene Holden
Mary Evelyn Bright	Carrie Lantz
DeWitt Kieffer Botts	Raymond Plank Lewis
Elsie Beryl Buckley	Ellen Elizabeth Peterson
Derua Brittain Cathrall	Rachel Mary Reed
Alden Eugene Davis	Mary Pauline Schenck
Errol Hunt Derby	Amy Pearl Sill
Raymond Fasold	Ellen Mae Smith
Fanny Emmaline Fisher	Emma Alice Strine
Helen Gertrude Fisher	Mary Dorothea Tooley

# STUDENTS

## RESIDENT GRADUATES

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Name	Address
Mary Marguerite Downer, B.S., in Biology,	Glassboro, N. J.
Henry Lawrence Fonda, A.M.	Milton
Voris Blaine Hall, B.S., in E. E.	Montgomery
George Merrill Kunkle, B.S., in M. E.	Lewisburg
Elizabeth Fairchild Spyker, B.S.	Lewisburg

## SENIOR CLASS

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Name	Address
Martha Esther Achenbach	Reading
John Nevin Bauman	Danville
Robert Kinsloe Bell	Mount Union
George Norman Benjamin	Chester
Dawson Floyd Bloom	Sunbury
Lambert Teufel Botts	Milton
Thirza May Bromley	Uniontown
Margaret Irene Brown	Lewisburg
Merrill Wilson Brown	Lewisburg
Leslie Harland Campbell	Utica, N. Y.
Nelson Ellsworth Chance	Dividing Creek, N. J.
Ruth Prettyman Clark	Collingswood, N. J.
Daymond Wallace Copeland	Carbondale
Elthera Glenn Corson	Bridgeton, N. J.
James Campbell Craig	Philadelphia
David Raymond Crossgrove	Lewisburg
Chloe Pearl Crossley	Hughesville
Ethyle Douglass Culbert	Elizabeth
Herbert Setley DeLong	Watsonstown
Joseph Daykin Dent	Pittsburgh
Errol Hunt Derby	Scranton
Merrill Brown DeWire	Lewisburg
Stephen Frederick Dimlich	Scranton
Robert Donaldson	Dubois
Ralph Miller Dyer	Elysburg

Name	Address
Lewis Abram Eaton	Harrisburg
Marion Ellenbogen	Danville
Charles M. Emerick	Nittany
Mark Reuben Everett	Slatington
Robert Boyer Faust	Sunbury
Beatrice May Fetterman	Delano
Julius Orville Fraker	Orbisonia
Harry C. Fries	Shady Grove
Edith Amanda Gardner	Carbondale
George Ewan Gaskill	Philadelphia
Mary Kathryn Glover	Vicksburg
Marion Kathryn Goho	Lewisburg
Herbert Clair Greenland	Pittston
Howard Judson Hann	Andover, N. Y.
Mary Arbutus Harner	Elkton, Va.
Adda Hayman	Turbotville
Henry Uriah Heckart	Lewisburg
William Roy Heckendorn	Duncannon
Thomas Jacob Shafer Heim	Winfield
Lester Adam Herb	Cleveland, Ohio
Ernest Wellington Hewitt	Martinsburg
Agnes Hoffman	Chadd's Ford
Emil William Holinger	Jersey City, N. J.
Irvin Valentine Holmes	Mawr Glen
Morris Daniel Hooven	Turtle Creek
Louisa Howells	Carbondale
Evan William Ingram	Nanticoke
Charles Vernon Iredell	Painted Post, N. Y.
Katherine Ellen Johnson	Williamsport
Miller Alanson Johnson	Lewisburg
Llewellyn Jones	Plymouth
Edward Clinton Kolb	Westmont, N. J.
Donald William Korth	New York, N. Y.
Robert Simington Kyle	Milton
George Walter Lees, Jr.	Camden, N. J.
Walter Larrison Lees	Oakmont
Willard LeGrande Lewis	Thompson
Lester Eugene Lighton	Williamsport
Cecilia Abihail Linch	Elmer, N. J.
George Post Little	Montrose
Esta Minnie Long	Lima, Ohio



Name	Address
Aileen Lott	West Pittston
George Loxley Lowry	Friendship, N. Y.
Henry Clay Lucas	Lewisburg
Frances Ada McFarland	Watsonstown
David James Martin	Scranton
John Arlington Mason	South Williamsport
William Wallace Masterton	Patterson, N. J.
Andrew Russell Mathieson	Munhall
Charles Warren Miller	Fleetwood
Harold Edward Miller	Lewisburg
Henry Lewis Davis Moore	Bridgeton, N. J.
Helen Louise Moyle	Plymouth
Harry LeRoy Nancarrow	Jersey Shore
Robert Mitchell Neal	Rio Grande, N. J.
Glenn Edwin Ott	Orbisonia
James Alfred Pangburn	Elizabeth
Elizabeth Narcissa Patterson	Kirkwood
Sidney James Peale	Eagles Mere
Hayes LeRoy Person	Williamsport
Felix Piekarski	Bellevue
Clarence Henry Pontius	Sunbury
Evelyn Gwendolyn Powell	Kingston
Stephen Fraley Puff	Philadelphia
Marguerite Isabel Quigley	Williamsport
Wilbur Barner Ream	Lewisburg
Charles Afflerbach Reed	Philadelphia
Helen Reed	New Brunswick, N. J.
Elton Phillips Richards	Wilkes-Barre
Marion Riess	Mercedes, Texas
Archie M. Ripple	Milton
James Edward Robbins	Lewisburg
William John Rolfe	Scranton
Walter Dry Roos	Reading
Dwight William Rude	Waymart
Mary Pauline Schenck	Morristown, N. J.
Anthony Alfonse Schwenkler	Mount Carmel
Julius Frederick Seebach	New Philadelphia, Ohio
Furman Watson Shaw	Haddonfield, N. J.
Walter Stanley Shoffstall	Kulpmont
Margaret Snover Siple	Lewisburg
Warren Henry Slocum	Reading

Name	Address
George Addison Smith	Flanders, N. J.
Robert Bruce Smith	Hughesville
William Everett Clark Speare	Lewisburg
Daniel Ridgeway Steele	Newton, N. J.
Anna Leila Sterling	Meshoppen
Harold Andrew Stewart	Copley, Ohio
Paul Stolz	Philadelphia
Russell Ray Stout	Cedarville, W. Va.
Margaret Helen Trump	Derry
Robert Charles Umlauf	Muncy
George Washington VanDyke	De Ruyter, N. Y.
Dorothy Villinger	Williamsport
Charlotte Volkmar	Williamsport
Robert Norman Waddell	Pittsburgh
Hiram Jacob Wagner	Smithton
Katherine Luetta Wagner	Lewisburg
Harry John Wagoner	Philadelphia
Helen McCormick Walton	Williamsport
Harry Redcay Warfel	Reading
Henry Meyer Weber	Mt. Ranier, Md.
Adelia Lovinia Wilkes	Cherry Creek, N. Y.
Theodore Courtlandt Williams	Vineland, N. J.
Orville Clyde Wrigley	Clearfield
John Clayton Yon	Atlantic City, N. J.

Seniors, 131

## JUNIOR CLASS

Name	Address
Robert Walter Angstadt	Lewisburg
Nelle Wolf Aumiller	Lewisburg
William Westley Baird	Reedsville
Edna Mary Baker	Lewisburg
Vincent Arthur Baldauf	Reynoldsville
Charles McKnight Bashore	Mifflintown
George Harold Beattie	Shippensburg
Mary Elizabeth Beirne	Wilkes-Barre
Matilda Eliza Bell	New Millport
Luke Reynolds Bender	Milton
Sarah Musser Bernhardt	Lewisburg
Charles Hilaire Bitner	Milton

Name	Address
James M. Bortz, Jr.	Vandergrift
Charles Franklin Brandt	Sharon
George Hobart Brown	Morristown, N. J.
John Packer Haas Carter	Sunbury
Richard Theron Carvolth, Jr.	Peckville
Clara Margaret Casner	Newberry
Forrest Nathaniel Catherman	Mifflinburg
Victor Gordon Clare	Millville, N. J.
Hilda Dixon Coates	Wilkes-Barre
Barbara Helen Coe	Indiana
Marguerite Nancy Coe	Indiana
Lydia Coene	Patterson, N. J.
Willard Henry Collins	Lewisburg
Vincent Paul Connelly	Branchdale
Edwin Bailey Cooke	Wilkes-Barre
Clarence Anderson Davis	Nanticoke
Elizabeth Lillian Davis	Nanticoke
Herbert Nathan Derr	Milton
Emily Kathryn Devine	Dunmore
Lottie Noreene Dietz	Danville
Esther Virginia Dodson	Westmont, N. J.
Thomas Raymond Dorris	Nanticoke
Holmes Tomlin Douglass	Cape May Court House, N. J.
Frederick Eugene Duffee	Oil City
Homer Titus Eaton	Erie
Walter Pierson Edwards	Gouldsboro
Harold Spencer Eisley	Lewisburg
Charles Malcolm Emerick	Nittany
Stuart Albright Epler	Reading
David Hobart Evans	Wilkes-Barre
Anna Gladys Fairchild	Milton
Hattie Cole Fertig	Lewisburg
John Craig Finnegan	Belford, N. J.
Grace Rau Follmer	Milton
Emma Magdalena Fuhrer	Scranton
Katharine May Fulford	Morristown, N. J.
Albert L. Gandy	Cape May Court House, N. J.
Karl George Goerdel	Mifflinburg
John Augustus Gray, Jr.	Milton
Elizabeth Dunbar Groff	Montgomery
Arthur Earl Harris	New Castle

Name	Address
Robert Paul Hartz	Reading
Alan Richard Haus	Reading
Richard Roy Heckert	Sunbury
Edward Fielding Heim	Lewisburg
Henry LeRoy Heller	Reading
John Crowther Hendren	Philadelphia
Grant Oswald Herb	Snydertown
James Leo Hess	Lewisburg
Ethel Mae Hoffman	Neffs
Cameron Burnside Holter	Howard
Charles Maxwell Hower	Bloomsburg
Edwin Weimer Hull	Montgomery
Robert Leon Hulsizer	Milton
James Bigger Hutchison	Scottdale
Luther Paul Ilgen	Mifflinburg
Eugene Kallay	Leechburg
Russell Foulke Keller	- Quakertown
Sarah Anna Kerstetter	Lewisburg
Clarence Hoffman Key	Millville, N. J.
Alden Park King	Succasunna, N. J.
Denzil King	Muncy
Elvin LaRue Kohler	Hughesville
Joseph Kostos	Mount Carmel
Stanford LaRue Kunkle	Newberry
Donald Sheeder Laher	Everett
Hilding Alfred Larson	Port Allegany
Martha Leiser	Lewisburg
Dorothy Amelia Lent	Lewisburg
William Wallace Lewis	Trevorton
Voris Albert Linker	Williamsport
Marguerite Theresa Lotte	Paterson, N. J.
John Russell Lowman	Johnstown
William Meredith Lybarger	Mifflinburg
Freda Crowl Mackereth	Elkview
Hannah Farr Madison	Muncy
Murvington Hunter Malaun	Carbondale
Thomas James Mangan	Charleroi
Edna Martin	Lewisburg
Richard Armstrong Mason	Boise, Idaho
Winfield Scott Masters	Taylor
Floyd Kline Mayhood	Blairsville

Name	Address
Dorothy Conrad Meixell	Lewisburg
Carl Adam Metz	Scranton
Martin Keller Mohler	Ephrata
Charles Byron Moore	Reynoldsville
Clarence Byron Moore	Reedsville
Howard Harrison Moore	Reynoldsville
Thomas S. Morgan, Jr.	Paterson, N. J.
Ruth Lillian Mount	Summit, N. J.
Irene McAllister	McKeesport
Marjorie Bernice McCoy	Jersey Shore
Harold Clyde McCullough	Washington
Francis Patrick McDermott	Houtzdale
John David McGann	Harrisburg
George Besold Nesline	Sunbury
William Edgar Nichols	Williamsport
Ella Bolton Osbourn	Lewisburg
Alexander Monroe Peters	Slatington
Aelred Leo Quinn	Great Neck, N. Y.
Frances Fess Reamer	Pittsburgh
Charles Frederick Rieckenberg	Great Neck, N. Y.
Alexander Rexford Roller	Picture Rocks
Nelson Samuel Rounsley	Millerstown
Thaddeus A. Salaczynski	Nanticoke
Roy William Sauers	Mifflinburg
George Jay Bevier Schuyler	Williamsport
Howard Carl Shelly	Hazleton
Harold Lawson Shimer	Milton
Herman Deane Shultz	Moorestown
Charlotte Walton Siple	Lewisburg
Chelton Winthorff Smith	Lewisburg
Donald Smith	Flanders, N. J.
Ellis Sargeant Smith	Rochester, N. Y.
Roswell Oscar Barnett Smith	Morristown, N. J.
Verna Lois Smith	Mahanoy City
Dorothy Marie Spangler	Milton
Kathryn Pfenninger Spotts	Lewisburg
Marjorie Elizabeth Sprout	Picture Rocks
Ignas Martin Stadulis	Plymouth
Alfred Tennyson Steininger	Lewisburg
David Hadden Stewardson	Jersey City, N. J.
Herbert Elisha Stover	Austin

Name	Address
Selah Wood Sutton	Morristown, N. J.
Frank Thompson Taylor	Trenton, N. J.
Harry Vernon Thomas	Wheeling, W. Va.
Franklin Schreyer Townsend	Milton
Ella LaRue Unger	Shamokin
James Royall Waldron	Englewood, N. J.
Stephen James Wargo	Strong
Elizabeth Van Scoyoc Weidner	Vineland, N. J.
Ralph Emerson Wilkinson	Trevorton
Thomas Stuart Williams	Wilkes-Barre
William Charles Arthur Willman	Mount Carmel
Leonard F. Worthington	Eagles Mere
John Lee Yarnall, Jr.	Lewisburg
Charles Adam Zeller, Jr.	Dalton

Juniors, 149

## SOPHOMORE CLASS

Name	Address
Margaret Evans Abbot	Haddonfield, N. J.
Alexander Aloysius Aleshouckas	Great Neck, N. Y.
John Detki Alexander	Philadelphia
Donald Cargill Allen	Lewisburg
Mary Elizabeth Appleman	Pittsburgh
Norman Roy Appleton	Philadelphia
Nellie Carroll Balliet	Nanticoke
William Elwood Balliet	Milton
Audrea Arline Baumeister	York
Gordon Preston Bechtel	Reading
Allen Bentham Beddoe	Dickson City
Fred Sturges Beers	Dalton
John Robert Beers	Dalton
Sanford Berninger	Mifflinville
Raymond R. Beyer	Bloomsburg
Ralph Oswald Bier	Sunbury
Clarence Walter Bingeman	Trevorton
Ruth Hanna Brown	Ewan, N. J.
Eve Bolles Bunnell	Montrose
Rhea Ardelle Burgett	Homer, N. Y.
Jennie Burke	Bordentown, N. J.
Harry Miller Calhoun	Port Allegany



Name	Address
Philip Clarence Campbell	Danville
Ivar Carl Carlson	Port Allegany
Almet Monroe Case	Waverly, N. Y.
Marie Josephine Chambers	Nanticoke
Florence Dorothy Cornwell	Plainfield, N. J.
Carrie Elizabeth Couffer	Steeltown
George Raymond Crawford	Mifflinburg
Edward Cleaver Crowl	Elysburg
Forest Franklin Dagle	Northumberland
Donald Arthur Dallman	Waverly, N. Y.
Howard Thomas Davenport	Plymouth
Daniel Webster Davis	Nanticoke
Dorothy L. Davis	Berwick
Nelson Fithian Davis, Jr.	Lewisburg
Phoebe Beatrice Davis	Olyphant
William Powell Day	Brookside
William LeRoy DeHaven	Duncannon
Harold Davis Dentler	Milton
Chester Henry Derck	Trevorton
Lillian Jane Derr	Turbotville
Leona Sophia Dickrager	Tionesta
Charles Emory Diffendafer	Nanticoke
Charles Raymond Dwyer	Pottstown
Frieda Eva Ebner	Glassboro, N. J.
Myra Catharine Effinger	Altoona
Richard K. Estelow	Mt. Holly, N. J.
Hayden J. Evans	Johnstown
Margery Genea Farley	Mifflinburg
Joseph Marion Fitting	Enders
Esther Marie Fleming	Nutley, N. J.
Harold Gustav Florin	Johnsonburg
Edna Mae Follmer	Milton
Fred Alfred Foxall	Wilkes-Barre
Herbert Spencer Franklin	Morristown, N. J.
Grace Carver Fry	Duncannon
Walter Denton Galbraith	Johnstown
John Buxton Gale	West Chester
Arthur Frank Gardner	Harrisburg
Mark Kuebler Gass	Sunbury
Grace Good	Watsonstown
Bright Ellsworth Greiner	Winfield

Name	Address
Lewis G. Griffiths	Scranton
Lucile Anita Gutelius	Mifflinburg
Vera Evelyn Haas	York
Ralph Franklin Hartz	Reading
George Webster Haupt	Sunbury
Hulda Dorothea Heim	Williamsport
Eloise Ernestine Hill	Williamsport
Walter Liddell Hill, Jr.	Scranton
Wade F. Hoffman	Vandergrift
John Hughes	Hollidaysburg
Isaac Humphrey	Nanticoke
Richard Kelly Hutchison	Altoona
William Jackson Irvin	Lewisburg
Carmault Benjamin Jackson	Woodstown, N. J.
Casimir Joseph Jarka	Mt. Carmel
Harry Warren Johnson	Lewisburg
William Spencer Johnson	Harrisburg
Helen Louise Johnston	Altoona
Finley Keech	Netcong, N. J.
James Kenneth Kennedy	Milton
Ruth King	Muncy
Harriet Pauline Kinsman	Plymouth
Angeline Ruth Kissinger	Reading
Helen Felicia Kitlowski	Nanticoke
Adam Alfred Klein	Wilkes-Barre
Leander Swartz Klingman	Sunbury
Geraldine Harriet Kocher	Berwick
Karl Krug	Reading
Emily Krissinger Kurtz	Berlin
Charles Elmer Kyle	Milton
Hugh David Kytte	Nanticoke
Elizabeth Laedlein	Williamsport
Roy Horst Landis	Union Deposit
Harry LaBerte Lapp	Trenton, N. J.
Wilkin Lillibridge Lauer	Port Allegany
Lawrence Winters Lawson	Latrobe
Robert Earl Lepperd	Duncannon
Arthur Kenneth Lewis	Homestead
William Curtis Litterer	Danville
Welles Norwood Lowry	Carbondale
Reba Eva Mackenthun	Philadelphia

Name	Address
Corinne MacNamara	Thompson
George Mathieson	Munhall
Earl Balliet Mickley	Coplay
Emerson Ralph Miller	Ephrata
James Frederick Moore	Milton
Vincent Victor Mullen	Latrobe
James Gillaspy Myerly	Wilkes-Barre
L. Carol Myers	Williamsport
Charles Albert McDowell	Latrobe
Edwin John McGill	Hollidaysburg
Alta Grace Nickum	Allentown
Miriam Cammon Oakley	Manasquan, N. J.
Frank Julian Olney	Waltham, Mass.
Phillip Edgar Opp	Muncy
Mary Rachel Park	Montandon
William Winfield Parry	Lebanon
Charlotte Elizabeth Peters	Allentown
Harry Immanuel Peterson	Jersey Shore
Kathryn D. Pettigrew	Olyphant
Susanna Harris Plummer	Quinton, N. J.
Grace Poust	Muncy
Robert Harold Reitz	Trevorton
Ethel Reba Richardson	Reading
William Jennings Rinebold	Athens
Thomas D. Ritter	Renovo
Samuel Perry Rogers	Jeffersonville
Andrew Long Rooney	Hollidaysburg
Max Abraham Rosenbloom	Austin
Evan Willis Ross	Latrobe
Clarissa Marguerite Mary Russell	Keating
Harry Edward Schaffer	Chambersburg
Paul George Schmidt	Reading
Robert Richie Schultz	Bloomsburg
Ray Pauline Seaman	Lewisburg
Marvin Ayres Searles	Morristown, N. J.
Amorita Muriel Sesinger	Pitman, N. J.
Mary Eldridge Sholl	Burlington, N. J.
Grover R. Short	Lebanon
Edouard Burnsides Sisserson	Westfield, N. J.
Ethelwynne Mae Smith	Lewisburg
Laura Louise Smith	Reading

Name	Address
Dewey Alvin Snyder	Muncy
Joseph Whitmer Snyder	Lewisburg
Hugh Penn Sowers	Steelton
Catharine Young Stahl	Lewisburg
John Calvin Stahl	Lewisburg
Hannah Edith Steely	Shamokin
Thomas Reber Stein	Sunbury
Norman L. Stewart	Huntingdon
Roy Bratton Stine	Tyrone
Leon Lyle Stone	Thompson
Louis Karl Stuntzner	Norwood, Mass.
William Herbert Sugden	Wilkes-Barre
Grace Matilda Swan	Altoona
Sarah Anna Swartz	Penbrook
William J. Thomas	Nesquehoning
Jesse Adelbert Thompson	Williamsport
Freeman Thayer Tingley	Dimock
Emily Robinson Tregellas	Mahanoy City
Frances Edsall Van Cleaf	Stockholm, N. J.
Sallie Grace Vickers	Youngstown, Ohio
Alvin Snyder Wagner	Lewisburg
Clara Wasilewski	Nanticoke
Elsie Watson	Frostburg, Md.
Paul Augustus Weaver	Reading
Lois Kathryne Wentling	Conshohocken
Clifford E. Wentz	Jersey Shore
Edward George Wentzel, Jr.	Philadelphia
Eugene Woodford West	Apollo
Herman Ernest Wiant	Huntington Mills
Elizabeth Wickum	Altoona
Robert Alfred Williams	Philadelphia
Mary Jayne Williamson	Charleroi
Charles Imbrie Wilson	Jersey City, N. J.
Kenneth C. Winsor	Norwich, N. Y.
Marcella Jane Wood	Washington
Elmer LaRue Worthington	Eagles Mere

## FRESHMAN CLASS

Name	Address
Anna Kathryn Althouse	Wyomissing
John Alexander Ammerman	Dallas
Charles Eugene Anderson	Reynoldsville
Ruth Allison Apgar	Roselle, N. J.
Dorothy Auer	Norristown
Marion Ayars	Millville, N. J.
Mary Ethel Bailey	Latrobe
Mable Elizabeth Baker	Vicksburg
Paul Wesley Baker	Williamstown, N. J.
William Robert Baker	Stowe
Leonard Clair Baldauf	Reynoldsville
Chester Leon Bardole	Watsonstown
Frank Stanley Bartosawicz	Mount Carmel
Joseph Bossard Basinger	Johnsonburg
Constance Huntting Bennett	Glassboro, N. J.
Eugene Stull Biddle	Muncy
Victor Augustin Bihl	Harrisburg
Olive Winfield Billhime	Turbotville
Charles Richard Birch	St. Clair
George Leonard Black	Williamsport
Dessie Alberta Blaker	Charleroi
Arda Crawford Bowser	Ford City
Cornelia Ruth Boyd	Dover, N. J.
Herbert Smith Bradley	Port Washington, N. Y.
Frederick Russell Brant	Reading
Marguerite Jordan Brierley	Ocean Grove, N. J.
Jessie Kesson Brookes	Philadelphia
Myrtle Irene Broome	Sunbury
James A. Brown	Pittston
James Davenport Bryden	Kingston
Cleon Ferris Buck	Hughesville
William Arthur Bull	Hughesville
Charles Theodore Bunting	Trenton, N. J.
H. Roscoe Burrows	Picture Rocks
Ellsworth Eede Caldwell	Rochester, N. Y.
Willard Douglass Callender	Thompson
Fred Mordecai Campbell	Kittanning
Worthington Candrick	Olyphant
Lyell Carr	Conneautville



Name	Address
George Richardson Chamberlain	Trenton, N. J.
Marcus Marcellus Chapman	Vandergrift
Thomas Middleton Christley	Butler
Stanley Bachman Clemmer	Sunbury
Donald B. Cloward	Wilmington, Del.
Carlotta Harriet Conrad	Factoryville
Paul Bouynge Cooley	Altoona
Anna Mary Coyne	Philadelphia
Bertha Ella Cupp	Williamsport
Edythe Angelina Cupp	Milton
Elmer Custer	Johnstown
Frank Bernard Daniels	Wilkes-Barre
John Henry Daugherty, Jr.	Sunbury
Donald Alderdue Davis	Homestead
Frank Umstead Davis	West Chester
John Anderson Davis	Nanticoke
Robert Mitman Dawson	Watsonstown
Harry Oscar Dayhoff	Steelton
Earl De Coursey	Newtown
Ellis Warren Deibler	Shamokin
Isabelle Farrow Deibler	Shamokin
Eli Raymond Strunk De Turk	Griesemersville
Omar Ethan De Wald	Jerseytown
Margaret Dewees	Montrose
Arnold Thayer Dickerson	Port Washigton, N. Y.
Edna Matilda Dietrich	Reading
John Joseph Dietrich	Reading
Alan Joseph Dinn	Port Washington, N. Y.
Stella Domzalski	Nanticoke
Albin Joseph Drapiewski	Nanticoke
Willard Nesbitt Durbin	Plymouth
James de la Montagne Earle	Lewisburg
Gilbert Geiser Ebner	Harrisburg
Catherine DeEtte Edgett	Olyphant
Gladys Emrick	Shamokin
Edgar Eugene English	Jersey Shore
Furman Harold Entz	La Porte City, Iowa
Herald Price Fahringer	Sunbury
Abram Fairchild	Milton
Hazel Marie Farquhar	West Brownsville
Helen Jean Ferguson	Aspinwall



Name	Address
Anna Marie Fisher	Reading
Elva Berniece Flanagan	Pittsburgh
Kendon Viviani Foster	Carbondale
Margaret Bess Fowler	Watson town
Lloyd Charles Fry	Montgomery
Joseph Harlyn Fulmer	Olean, N. Y.
Le Roy Gans	Shamokin
Ellis Bailey Garrison	Wilkinsburg
Enoch Anthony Gdaniec	Mount Carmel
Andrew Martin Gehret	Shillington
William George Gehring	Bridgeton, N. J.
Donald Joseph Gensemer	South Williamsport
Francis Howard Gibson	Wilkinsburg
Albert Harold Gille	Morganza
Christine I. Gillespie	Catawissa
Olga Amalie Goerdel	Mifflinburg
Carl Frank Goerlitz	Scranton
Stephen Goho, Jr.	Lewisburg
Nevin Henry Grieb	Tylersville
Dalzell Melvin Griffith	Johnstown
Robert Yocum Grone	Danville
Mary Elizabeth Grove	Lewisburg
Arthur Hill Gumbert	Vandergrift
Robert John Haberstroh	Scranton
Byron William Hahn	Plymouth
Clair William Halligan	Ephrata
LeRoy Raymond Halliwell	Pottsville
Elinor Solly Hanna	Philadelphia
Paul Edward Harding	Williamsport
Perilla Ravina Harner	Mount Carmel
Jennie Margaret Harrington	Sunbury
Robert Joseph Hartlieb	Lebanon
Alford Herbert Haslam	Palmerton
Mildred Alice Hayden	Greensburg
Mary Gertrude Heilman	Oakmont
Jack J. Hellewell	Phillipsburg
Reeves Walter Hendershot	Ingram
Richard Poinidore Hendren	Philadelphia
Miles W. Henninger	Gowen City
Anna Liddell Hill	Scranton
Harry Segner Hill	Mohnton

Name	Address
Seth Arthur Hill	Milton
Cyrus Hoffa	Wilkes-Barre
Elizabeth D. Hoffman	Chadd's Ford
Daniel Walker Holloway	Troy
Frank Warren Homan	Philadelphia
Martha Louise Hood	Saltsburg
Florence Elizabeth Horam	Lewisburg
Lester Hipple Horam	Lewisburg
Anna Horoschak	Perth Amboy, N. J.
Herbert Thomas Hughes	Plymouth
Harold Steiner Hunsicker	Petersburg, Ohio
Elizabeth Hurst	Norristown
Lewis LeRoy Hutchinson	Reading
Charles Grover Hyman	Winfield
Marion Aleths Jack	Wayne, N. J.
Alfred Voris Jacobs	Danville
Frank Joseph Jodzis	Mount Carmel
Jean Pearle Johns	Cresson
Anna Margaret Johnston	Altoona
James Hayes Jolly	Pittsville
George Hadfield Jones	Homestead
Harold Jones	Wilkes-Barre
Harry Walter Jones	Centralia
Alvin Fred Julian	Reading
Frances Dorando Keough	Chester, N. J.
Helen May Kerstetter	Lewisburg
Oscar Frederick Kersteter	Milton
Edith Leone Kieser	Milton
Laurence Myron Kimball	Vineland, N. J.
Kathryn Chance Kimble	Vineland, N. J.
Lester Unger Klingman	Sunbury
John Carlisle Koch	Harrisburg
Stanley Vincent Kostos	Mount Carmel
Emma Lillian Kunkle	Newberry
Jacob Henry Kutz	Douglassville
Frederick Lauster, Jr.	Harrisburg
Anna Margaret Lees	Juniata
Ruth Ellen Leitzel	Lewisburg
Isaac Levine	Patterson, N. J.
Arlington Reuben Lewis	Palmerton
George Washington Lewis	Vineland, N. J.

Name	Address
Lawrence Delroy Lewis	Watsonstown
Harold Smedley Liddick	Lewisburg
Thomas Whyte Ling	Johnstown
Vivian Beatrice Livingstone	Clearfield
Mary Louise Llewellyn	Frostburg, Md.
Jefferson Carroll Loughlin	Williamstown, N. J.
Frederic Kimball Lovejoy	Manhasset, N. Y.
Kenneth Aldrich Lowry	Friendship, N. Y.
Vernard Elmer Lozier	Stanhope, N. J.
Ransom George Lyons	Muncy
Albert Rees Mahoney	Trenton, N. J.
John Joseph Malinowski	Jersey City, N. J.
Paul Carew Mallay	Stanhope, N. J.
Dorothy Agnes Markham	Westfield, N. J.
Robert Markowitz	Pottstown
Harry Wolfe Mathers	Lewisburg
Laura Virginia Mead	Bridgeton, N. J.
Samuel Arthur Mednick	Tamaqua
John Harold Melhuish	Dorranceton
Luther Frederick Miller	Lewisburg
Alice Pearl Minch	Tyler Hill
Benjamin Stanley Moore	Pitman, N. J.
David Wendell Morgan	Franklin
Margaret Morgan	Blakely
Norman Watkin Morgan	Nanticoke
Dewey William Morrett	Steeltown
Helmar Mueller, Jr.	Trenton, N. J.
Marion Delphine Murphy	Scranton
Lawrence Emery Murray	Reynoldsville
Natalie Elizabeth Musser	Lewisburg
Thomas McKinley Musser	Mifflinburg
Skillman Earl Myers	Trenton, N. J.
Harold Charles McGraw	Philadelphia
Frank R. McGregor	Vandergrift
Everitt Samuel McHenry	Hazleton
Marjorie Elizabeth Nichols	Clark's Summit
Walter Scott O'Brien	Clearfield
Joella Phyllis Ottmyer	York
Lloyd Custer Palmer	Johnstown
Robert Stedman Park	Syracuse, N. Y.
Henry Mark Parmley	Mahanoy City

Name	Address
Stewart U. Patton	Parkers Landing
Aravilla Anna Peters	Grampian
Norman Everett Piersol	Honey Brook
*Bertha Agnes Pollock	Rochester Mills
Frances Susan Post	Thompson
Jonathan Prichard	Swarthmore
John Straw Purnell	Lewisburg
Frank Wesley Ransom	Dorranceton
Elmer Lee Reiter	Montoursville
Ruth Adele Reuhl	Roselle, N. J.
Samuel Harmer Rickard, Jr.	Philadelphia
Robert Eleven Ross	Ridgway
Alma Winifred Royer	Hazleton
Lillian Mae Russell	Mehoopany
Margaret Hyde Russell	Bedford
Albert Sandoval	Valencia, Venezuela
David Arthur Sangston	McClellandtown
Jefferson Verne Sangston	McClellandtown
Israel Satz	Brooklyn, N. Y.
Joseph Randolph Schafer	Shamokin
Geraldine Schmucker	Watsonstown
Sherman Richards Schooley	Trucksville
Elsie Donaldson Schuyler	Lewisburg
*Harry Meyers Seldomridge	Ephrata
Martha Marie Shafer	Ridgway
Walter Blanchard Shaw	Lewisburg
Richard William Sheffer	York
William Ayresman Shipman, Jr.	Sunbury
Howard Shoemaker	Salem, N. J.
Dorothy Broome Sholl	Burlington, N. J.
Susanna Kathryn Shultz	Hughesville
Pennell McCoy Shumaker	Sunbury
Bertha Mae Seasholtz	Sunbury
Jerome Francis Skehan	Reynoldsville
Margaret Elizabeth Smail	Williamsport
Bertha Louise Smith	Philadelphia
Donald Rylance Smith	Lewisburg
John Howard Smith	Hughesville
Nina Grace Smith	Dawson

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\*Deceased.

Name	Address
James Jackson Snyder	Winfield
Lloyd Preston Snyder	Paxinos
William Grant Snyder	Williamsport
George Washington Sour	Jersey Shore
Earl Emmanuel Sousley	Hamburg
Anna May Speare	Lewisburg
Harry Edward Stabler	Endicott, N. Y.
Jennie Ethleen Stackhouse	Lewisburg
Luke L. Stager	Lebanon
Edythe Susanna Statler	Johnstown
Joseph Homer Steele	New Alexandria
Charles Leonard Steiner, Jr.	Oakmont
Frank William Summerfield	Philadelphia
Harriet Wallower Swartz	Penbrook
Rupert Morris Swetland	Mills
Harold Womer Tench	Wilkes-Barre
Baden James Thomas	Nanticoke
John Edward Tomlinson	Trenton, N. J.
Edna Tompkins	Paterson, N. J.
Edwin Wesley Treadwell	Williamsport
Charlotte Wilson Van Cleaf	Stockholm, N. J.
Harold Franklin Vandermark	Nanticoke
Kathryn Franian Wainwright	Lewisburg
James Howard Walter	Claysburg
Oliver Johnston Walter	Claysburg
Prudence Lumetta Walters	Swengel
James Harold Watson	Franklin
Isabella Reinhardt Webster	Conshohocken
August Reinhardt Weishaar	Williamsport
Albert Leonard Wheat	Millville, N. J.
Hayden James White	Olyphant
Dorothy Francis Wilhelm	Williamsport
John Pritchard Williams	Shenandoah
Foster Charles Wilson	Olyphant
Herbert Oscar Wilson	Pittston
Mary Maclay Wilson	Belleville
Sarah Gonzales Wilson	Belleville
Glenn Wesley Wolfe	Milton
Russell Sheldon Wolfe	Point Pleasant, W. Va.

Name	Address
James Marsena Wood	Wilkinsburg
William Guy Woodring	Reynoldsville
Kasper Donald Wren	Steeltown
Frank Cort Wright	Latrobe
Oswald Yeager	Sunbury
Charles Russell Decker Yearick	Nittany
Harry Ried Yiengst	Mahanoy City
Gail Borden Young	Plymouth
Margaret Catherine Young	Latrobe
John F. Zug, Jr.	Asheville, N. C.

Freshmen, 293

## SPECIAL STUDENTS

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Name	Address
Percy Boughey	Montandon
John J. Hellewell	Philipsburg
Carolyn Julia Hunt	Lewisburg
Otto C. F. Janke	West Milton
Joseph A. McAloose	Kelayres
Raymond Patterson Wilson	Philadelphia

Specials, 6

## RESERVE OFFICERS TRAINING CORPS

---

Captain WILLIAM H. H. MORRIS, Jr., U. S. A.,  
Professor of Military Science and Tactics

Sergeant CLARENCE J. SHARP,  
Assistant

## ADVANCED COURSE

Eugene Stull Biddle	Jacob Henry Kutz
Merrill Brown DeWire	Walter Dry Roos
Stuart Albright Epler	Earl Emmanuel Sousley
Edward Fielding Heim	Henry Meyer Weber



## SECOND YEAR BASIC COURSE

Joseph Bossard Basinger	Finley Keech
Allen Benthom Beddoe	Leander Swartz Klingman
H. Roscoe Burrows	Harry LaBerte Lapp
Fred Mordecai Campbell	Robert Earl Lepperd
George Richardson Chamberlain	George Mathieson
Marcus Marcellus Chapman	Lawrence Emery Murray
Nelson Fithian Davis, Jr.	William Winfield Parry
Eli Raymond Strunk DeTurk	Robert Harold Reitz
William LeRoy DeHaven	Andrew Long Rooney
Frederick Alfred Foxall	Max Abram Rosenbloom
John Buxton Gale	Paul George Schmidt
Arthur Frank Gardner	Marvin Ayres Searles
Carl Frank Goerlitz	Harry Edward Shaffer
Robert John Haberstroh	Edouard Burnsides Sisserson
Walter Liddell Hill, Jr.	Jerome Francis Skehan
John Hughes	Donald Smith
Richard Kelly Hutchinson	William Herbert Sugden
William Spencer Johnson	Harold Womer Tench
James Hayes Jolly	

## FIRST YEAR BASIC COURSE

Charles Eugene Anderson	William George Gehring
Paul Wesley Baker	Donald Joseph Gensemer
Leonard Clair Baldauf	Albert Harold Gille
Chester Leon Bardole	LeRoy Raymond Halliwell
Victor Augustin Bihl	Paul Edward Harding
James Davenport Bryden	Robert Joseph Hartlieb
Charles Theodore Bunting	Miles W. Henninger
Willard Douglass Callender	Harry Senger Hill
Worthington Candrick	Lester Hipple Horam
Paul Bouynge Cooley	Harold Steiner Hunsicker
Frank Bernard Daniels	George Hadfield Jones
Frank Umstead Davis	Harold Jones
John Anderson Davis	Alvin Fred Julian
Ellis Warren Deibler	Laurence Myron Kimball
Arnold Thayer Dickerson	John Carlisle Koch
Gilbert Geiser Ebner	Frederick Lauster, Jr.
Harold Price Fahringer	George Washington Lewis
Kendon Viviani Foster	Harold Smedley Liddick
Joseph Harlyn Fulmer	Jefferson Carroll Loughlin
Andrew Martin Gehret	Frederick Kimball Lovejoy

Kenneth Aldrich Lowry  
 Vernard Elmer Lozier  
 Albert Rees Mahoney  
 John Joseph Malinowski  
 Paul Carew Mallay  
 Harold Charles McGraw  
 Samuel Arthur Mednick  
 John Harold Melhuish  
 David Wendell Morgan  
 Dewey William Morrett  
 Helmar Mueller, Jr.  
 Skillman Earl Myers  
 Henry Mark Parmley  
 John Straw Purnell  
 Frank Wesley Ransom  
 Richard William Sheffer  
 Lloyd Preston Snyder

Harry Edward Stabler  
 Luke L. Stager  
 Joseph Homer Steele  
 Charles Leonard Steiner, Jr.  
 Baden James Thomas  
 John Edward Tomlinson  
 Harold Franklin Vandermark  
 James Harold Watson  
 August Reinhardt Weishaar  
 James Marsena Wood  
 William Guy Woodring  
 Kasper Donald Wren  
 Oswald Yeager  
 Charles Russell Decker Yearick  
 Harry Reid Yiengst  
 Gail Borden Young

## SUMMARY OF COLLEGE STUDENTS

Resident Graduate Students .....	5
The Senior Class .....	131
The Junior Class .....	149
The Sophomore Class .....	181
The Freshman Class .....	293
The Special Students .....	6
Reserve Officers' Training Corps ....	120

## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

By States				
Delaware	1	Delaware		3
Idaho	1	Elk		4
Maryland	6	Erie		2
Massachusetts	2	Fayette		5
New Jersey	94	Forest		1
New York	25	Franklin		2
North Carolina	1	Huntingdon		3
Ohio	4	Indiana		6
Pennsylvania	644	Jefferson		8
Texas	1	Juniata		1
Virginia	1	Lackawanna		34
West Virginia	2	Lancaster		5
Iowa	1	Lawrence		1
		Lebanon		4
		Lehigh		6
		Luzerne		57
		Lycoming		55
		McKean		6
		Mercer		2
		Mifflin		4
		Montgomery		6
		Montour		8
		Northampton		1
		Northumberland		101
		Perry		1
		Philadelphia		23
		Potter		1
		Schuylkill		35
		Snyder		1
		Somerset		1
		Sullivan		4
		Susquehanna		9
		Union		89
		Venango		4
		Washington		5
		Wayne		1
		Westmoreland		18
		Wyoming		3
		York		4
By Foreign Countries				
Hungary	1			
Venezuela	1			
By Counties in Pennsylvania				
Allegheny	22			
Armstrong	5			
Bedford	2			
Berks	7			
Blair	15			
Bradford	2			
Bucks	1			
Butler	1			
Cambria	9			
Cameron	1			
Carbon	3			
Center	5			
Chester	7			
Clearfield	6			
Clinton	2			
Columbia	9			
Crawford	1			
Cumberland	1			
Dauphin	22			

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Acting Corresponding Secretary, Leo L. Rockwell

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President, Evelyn Stanton Gundy  
Secretary, Fannie Brown Getz

Lewisburg  
Lewisburg

Number of Alumni 2267

Oldest Living Graduate

Rev. John Morris Lyons, Class of 1851

## ALUMNI PUBLICATION

By action of the Board of Trustees during the summer of 1919, there was created the office of Publicity Director of the University, with which was united the Editorship of the Alumni Monthly. This publication is sent gratis to the Alumni and such of the Matriculates as request it, being supported for the present by the Board of Trustees. All items of interest concerning Alumni or Matriculates should be sent to the Editor of the Monthly, Leo L. Rockwell, Lewisburg, Pa.

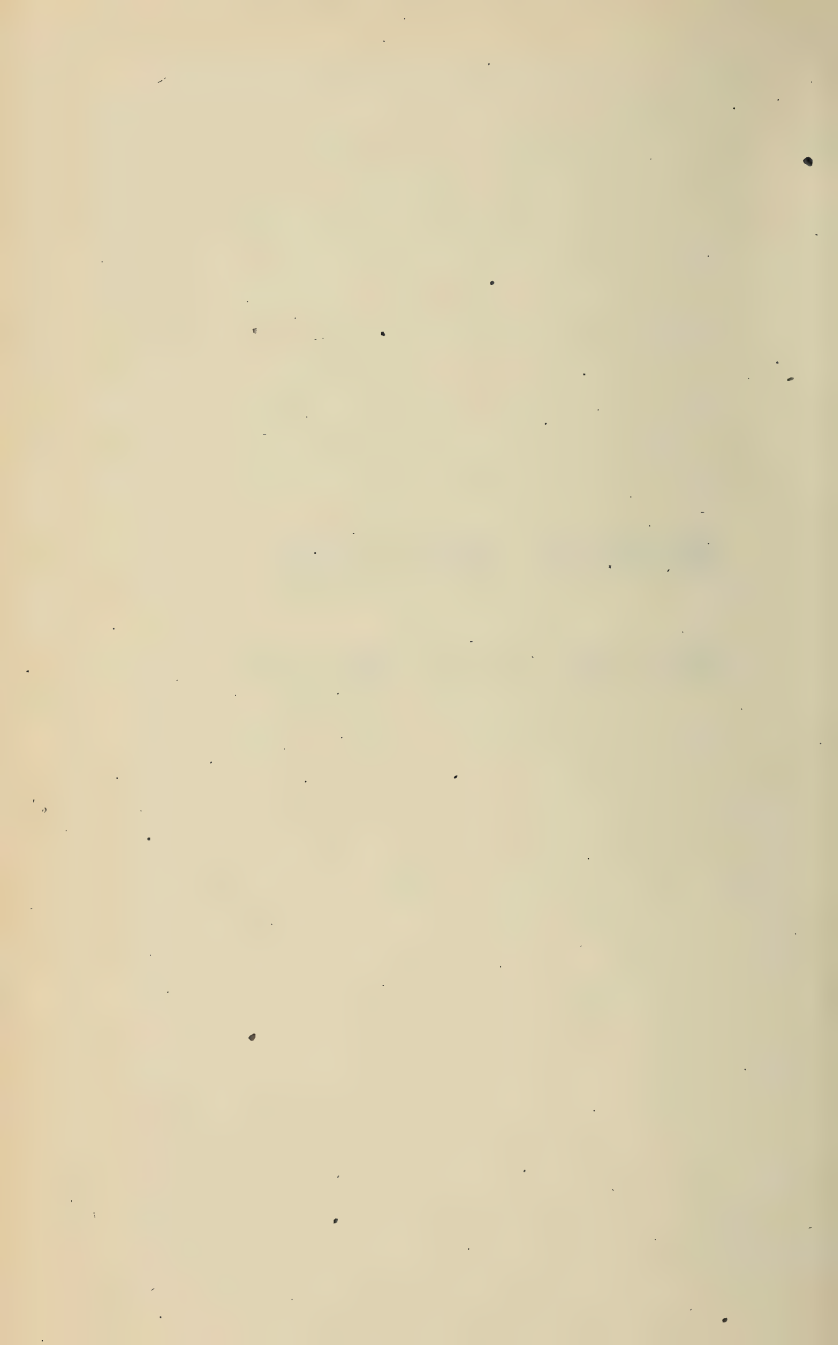
## THE THOUSAND MEMBER DRIVE

To arouse Alumni interest and make Alumni sentiment effective, the officers of the General Association are aiming to enroll as many graduates as possible in it. The price of Life Membership has been set at \$10. Membership fees should be sent to F. M. Simpson, Treasurer, Lewisburg, Pa.





Bucknell University  
The School of Music



# THE SCHOOL OF MUSIC

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## FACULTY

PAUL GEORGE STOLZ, A.M.

Director, Science of Music, Voice

(Bucknell University School of Music, Dr. Elysée Aviragnet, A.M.;  
Dr. Hugh Schussler, New York; Emrich and Soehnlín,  
Berlin, Germany).

CHARLOTTE GUION ARMSTRONG

Violin, History of Music

(Wyoming Seminary; New England Conservatory; Musin,  
New York City).

ANNA MARTHA PINES

Supervisor's Course

(Bucknell University School of Music; Comb's Conservatory,  
Philadelphia; Cornell University, Ithaca, N. Y.)

MORTIMER HOWARD

Voice

(Will Winch, Boston; Emelio Belari, New York; Tenor Soloist, Mar-  
ble Collegiate Church, New York; Arlington Street Church,  
Boston and First Presbyterian Church, Pittsburgh).

LAURA MAUDE SHULTZ

Voice, Solfeggio

(Bucknell University School of Music; Cornell University; Henry  
Gordon Thunder, Philadelphia; Helen Allen Hunt,  
Boston; R. Butler Savage, Pittsburgh).

DAVID MOYER

Piano, Advanced Harmony

(Alberta Jonas, Berlin; Ernst von Dohnanyi, Berlin).

JESSIE LOUISE COOPER

Piano, Beginners' Harmony

(Bucknell University School of Music; Prof. Cruthers, Philadelphia;  
Prof. Briggs, New England Conservatory).

## KATHERINE BERGSTRESSER

Piano, Pipe Organ

(Bucknell University School of Music; Peabody Conservatory of Music, George Boyle; Wilson College, Chambersburg).

## GEORGE TOWNSEND MAY

Piano

(Sigismund Stojowski, New York; Dagmar Walle-Hansen, Vienna; Mme. Frida Eissler, Paris; Rudolph Ganz, Berlin and Berne, Switzerland).

## HISTORICAL

Music was first taught at Bucknell University in 1853 by Melville Malcolm under the supervision of the Seminary. Various teachers had charge until 1858, when Monsieur Theodore P. Held, a French artist, took charge with one assistant, and in 1864 he was given a second assistant. In 1865 Monsieur Held's position became vacant, but he again resumed his work in 1866. In 1867 Alexander M. Loos was made Professor of Music. In 1869 Hermann F. Eberhardt took up the duties of Professor of Music and by 1870 there were sixty students enrolled in the Music Department. In 1871 a vocal teacher was added to the music faculty. In 1888 Professor Elysée Aviragnet, M.A., took charge of the Music Department. In 1892 Professor Aviragnet received the degree of Doctor of Music, after which the Music Department was known as the Bucknell University School of Music, one of the Distinct schools of the University, which are one corporation and have one President, who has general charge. Paul Stolz was actively associated with Dr. Aviragnet and his work in the School of Music. He became his assistant, later Assistant Director, and at Dr. Aviragnet's death in 1908, his successor as Director of the School of Music. In 1919 the music faculty consisted of nine teachers, three in piano, three in voice, one in violin, one in pipe organ, and one in supervisors' course, with an attendance of one hundred and seventy-seven pupils.

# COURSES OF INSTRUCTION

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## INSTRUMENTAL MUSIC

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### COURSE FOR THE PIANO-FORTE OF FOUR YEARS FOR GRADUATION

The pupil is required to pursue the most thoroughly approved modern system of technical training. After the first rudiments have been mastered, the Course of instruction leads to the practice of études, designed to unite with purely technical drill the requirements of artistic style and expression.

#### COURSE IN PIANO

##### First Year

Musical Exercises and Gymnastics to prepare the hands for playing; Gurlitt, *Technic and Melody*, Book I; Kohler, *Practical Method*; Lebert and Stark, *Instruction Book*, Part I; Loeschorn, Op. 84 and 65; Kohler, Op. 157; Duvernoy *School of Mechanism*, Op. 120; Etudes by Biehl, Lemoine, LeCouppéy, Bertina and Czerny; introductory technical work; Sonatina, Kuhlau, Clementi, Schytte; pieces by Behr, Böhm, Lange, Lichner and others.

##### Second Year

Heller, *Studies*, Op. 45, 46, and 47; Loeschorn, Op. 66; Czerny, Op. 299; Bernes, Op. 61; Easier Mozart, Haydn, Beethoven, Sonatas; Little Preludes by Bach; Bach Inventions, Scales, Arpeggios, and other technical work continued; Salon pieces by Bendel, Kullak, Merkel, Nevin, and other composers; preparatory octave and chord work.

##### Third Year

Czerny, Op. 740; Cramer, 50 Studies; Clementi *Gradus ad Parnassum*; Moscheles, Op. 70; Bach Suites, Handel Suites, Scarlatti pieces, Beethoven Sonatas; introductory Chopin work; compositions by Grieg, Godard, MacDowell, Moszkowski, and others; continued octave and chord work.



## Fourth Year

Bach Preludes and Fugues; Italian Concerta; Chromatic Fantasy and Fugue; Kullak Octave Studies; Selected Chopin Etudes; Liszt Studies; Beethoven Sonatas, Op. 53 and 57; other compositions by Chopin, Liszt, Schumann, and selected works by Tausig, Moszkowski, Saint-Saens, Brahms, and Rubinstein.

The outline is necessarily quite elastic and will adjust itself to the individual ability, requirements, and purposes of each student.

## THE PIANO COURSE

## First Year

First Semester	Second Semester
Musical Gymnastics	Etudes
Notation	Intrductory Technique
Scale Formations	Intervals and Triads
History of the Italian and French schools	History of the German School

## Second Year

First Semester	Second Semester
Studies	Preludes and Inventions
Elementary Harmony	Solon Pieces
Melody Writing I	Melody Writing II
Development of the Scandinavian School	Development of American Music
Development of Russian Music	

## Third Year

First Semester	Second Semester
Octave and Chord Work	Suites—Bach and Handel
Harmony {	Sonatas
	Harmony—Organ Point and Modulation
	History
History	Musical Appreciation
Musical Appreciation	

## Fourth Year

First Semester	Second Semester
Preludes and Fugues	Selected—Etudes, Studies, Sonatas
Concerta, Fantasy	Counterpoint
Counterpoint	Pedagogy
Pedagogy	

## COURSE IN PIPE ORGAN

The study of pipe organ is generally pursued by music students having at least Junior standing in piano. The Course is designed to provide a thorough education as choirmaster and organist, and provides for a training in all that pertains to intelligent performance of church music, voluntaries, and the art of accompaniment; also a systematic drill in technics, registration, and improvisation.

A new pipe organ for practice was installed during the summer of 1916.

### First Year

Stainer's Organ Method. Schneider's Organ Studies. Easy Hymn Tunes. Registration. Sight Reading. Easy pieces by Batiste, Flagler, Lemaigre, etc.

### Second Year

Dudley Buck's Short Preludes and Fugues, and Pedal Phrasing. Bach Chorales. Difficult hymn tunes. Organ solos of various styles by Rheinberg, DuBois, etc.

### Third Year

Sonatas by Merkel, Bach, and Mendelssohn. Preludes, Toccatas, Fugues. Quartet and chorus accompaniment. Selected solos by Guilmant, Malling, etc.

### Fourth Year

(Each Senior Must Register for Full Course)

Sonatas by Guilmant, Rebuke. Symphonies by Widor. Bach's Advanced Works. Chanting and solo accompaniment. Improvisation. Selected solos for concert use, by Frank, Widor, Lemare, Hollins, etc. Voice (two semesters).

It is very essential that an organist and choirmaster should understand the various voices he is to train, and for this reason we consider the voice requirement indispensable in the Organ Course.

A minor Course in Organ Construction will be required of graduate students in addition to the following theoretical courses:

Solfeggio and Dictation (two semesters).

Harmony (four semesters).

Harmonic Analysis (two semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

In order to give organ students a good presence in public appearance, all organ students will be required to appear in public and semi-public recitals once each month.

## COURSE IN VIOLIN

In the Violin Course, special attention is given to correct bowing, ear training and interpretation, a thorough acquisition, technically, and the study of a repertoire; with a few additions or changes to suit the individual requirements of the student, the general outline of the Course is as follows:

### First Year

Methods of Schubert, Wohlfart, Spohr, Belgian Violin School Book I, etc. Scales and bowing exercises to promote beauty of intonation. Easy pieces.

### Second Year

Schools by De Beriot, Mazas, and Kayser. First ten studies of Kreutzer. Belgian Violin School Book II.

### Third Year

Concertos by Viotti. Sonatas by Gade, Grieg, and others. Etudes by Kreutzer, Fiorillo, and Casorti. Belgian Violin School Book III.

### Fourth Year

Belgian Violin School Book IV. Rode Caprices and Concertos. Mendelssohn and Mozart Concertos. Solos by the best composers for the violin are used throughout the Course to develop style and phrasing.

Opportunity is given for ensemble playing to those sufficiently advanced. One year of pianoforte study is required.

Theoretical courses required for graduation:

Solfeggio and Dictation (two semesters).

Harmony and Analysis (4 semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

## COURSE IN VIOLONCELLO

### First Year

Technical exercises. Major scales in two octaves. "Method Practique", by S. Lee. Studies by Dotzauer. Easy pieces.

### Second Year

Technical exercises by Cossmann. Scales in three and four octaves. Studies by Lee and Franchomme. Concertinos and pieces by Romberg.

**Third Year**

Technical exercises by Fitzhagen. Advanced studies by Grutzmacher. Concertos.

**Fourth Year**

Technical exercises by Klengel and Becker. Advanced studies. Sonatas by Bach.

Theoretical courses. See Violin Course.

**COURSE IN CONTRABASS****First Year**

Warnecke's Method of Playing. Scales and finger exercises. Etudes.

**Second Year**

Vorzuegliche Uebungen, Hause's. Etudes. Overtures. Symphonies.

**Third Year**

Warnecke's Method. Advanced Etudes. Beethoven Symphonies.

**Fourth Year**

Warnecke's Method. Part 2. Wagner Operas. Solos by Sturm and Laska.

Theoretical courses. See Violin Course.

**COURSE FOR THE VIOLA**

Bruni's Methods and Studies by Campagnoli.

**VOICE CULTURE**

Careful instruction is given in the use of the voice and the correct manner in producing purity of tone—the equalization of tone throughout the whole compass of the voice, and gain for it flexibility, fullness and durability.

**Tone Work.** Physiology, breath control, voice placing.

**Enunciation.** Attack, release, vibration, legato. (Vowels, diphthongs, and consonants).

**Sight Singing.** Staff notation, rhythm, ear training, harmony.

**Repertoire.** Interpretation and classification.

**Song, Oratorio, and Opera Coaching.** Pupils desiring to acquire the true rendition in oratorio solo singing, as exemplified in the interpretation of the great singers and conductors, can secure the necessary knowledge and thus equip themselves for public performances.

Ensemble singing, Duets, Trios, Quartets, and Choruses from Operas and Oratorios.

Studies from the works of old masters such as Palestrina, Orlando di Lasso, Gabrieli, Leo Hassler, etc.

Production of various opera scenes.

### First Year

Breath Control. First Vocalises of Concone. Diction. Slow, Easy Songs. Solfeggios.

### Second Year

Vocalises by Concone, Marchesi, Lamperti, and others. Diction. More advanced English songs. Simple Recitative. Simple Arias. Solfeggios. Piano (one lesson weekly). Chorus. Advanced Vocalises, Song Interpretations. Velocity.

### Third Year

Advanced Vocalises. Song Interpretation. Velocity. Coloratura singing begun. Difficult Recitatives. Elaborate Arias. Solfeggios. Advanced. Chorus.

### Fourth Year

Complete Oratorio Rôles. Complete Opera Rôles. Preparation of Concert Programs. Chorus.

Theoretical courses required for graduation. See Theory for Piano Course.

## TEACHERS' COURSE IN PUBLIC SCHOOL MUSIC

This Course provides in a systematic manner the best teaching methods, together with a thorough drill in sight reading, ear training and harmony; also gives actual practice in conducting the classes. In most of the public schools the regular grade teachers instruct the pupils under the supervision of a supervisor trained for the work. The purpose of this department is training for such supervision; by instructing pupils how to teach others to teach sight singing.

Outline of music used in the four-year Supervisor's Course:



### First Year

**Sight Singing.** This Course is elementary. The student must possess a singing voice of acceptable quality. Proficiency in sight singing is of great advantage to the student entering the Supervisor's Course.

To complete this course the student must use Latin syllables to sing at sight individually music suitable for the first four years in the public schools.

### Second Year

**Sight Singing.** The student is required to sing at sight with and without syllables, music suitable for the first seven years in the public schools.

### Third Year

**Sight Singing.** The student is required to sing at sight without accompaniment, reading words and music simultaneously, the music used in the upper grades of the public schools and in the high school.

### First Year

**Dictation.** (Sense of hearing based on the study of tone and rhythm). The student gains the power to think tones and to sense rhythms and learns to recognize and write simple melodic phrases in all keys.

Oral and written dictation work of the first four years in public school music, and singing from memory all sequential studies is required.

### Second Year

**Dictation.** Each student is required to complete the oral and written dictation, including all sequential studies.

### Third Year

**Dictation.** This course completes melodic dictation. Aural recognition of intervals and of chords in their fundamental and in their inverted positions in both major and minor tonalities is required in harmonic dictation.

### First and Second Years

**Materials and Methods.** The study and demonstration of materials and methods for kindergarten and the first four grades in public school music is considered. Selection, presentation, interpretation of rote songs for the lower grades, and the different tonal and rhythmic problems are taken up.



### Third Year

**Materials and Methods.** This Course is devoted to the teaching and supervising of music from fifth to eighth grades, inclusive.

### Fourth Year

**Materials and Methods.** The topics for consideration are: School chorus, glee clubs, grading and classification.

**Orchestral Technique.**

**Practice Teaching.**

Theoretical courses required for graduation:

Harmony and Analysis (four semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

## HARMONY

The fundamental principles of the theory of music are embodied in the study of harmony which treats of the different chords in their natural relations and combinations. The subdivisions of the subject are as follows: Intervals, or the measurement of the difference in pitch between one tone and another; triads, seventh and ninth chords with their inversions and resolutions; chromatically altered chords; augmented chords; cadences; suspensions; passing and changing notes; organ point, modulation.

The work consists of written exercises on basses (both figured and unfigured) and the harmonization of given melodies in three and four voices. These are corrected by the instructor out of the classroom and subsequently discussed with the students individually. Many exercises are also worked out on the blackboard by the students.

Modern Harmony, by Foote and Spalding, is used as the basis of the instruction. The Treatises of Prout, of Chadwick, and of others are used as reference books, and supplementary illustrations and explanations are given in the classroom. The course is as follows:

### First Semester

Musical Notation, formation of Scales, both Major and Minor, intervals, triads, and chord connection. Simple part writing from given basses and sopranos; the chords of the seventh, with exercises harmonizing in open and close positions.

Modulation. Transposition of various models in all keys. Harmonizing melodies which modulate.

### Second Semester

Chromatically altered chords, suspension, retardation, appoggiatura, passing tone, embellishment, pedal point.

No text-book required the first semester.

## CLASSES FOR ALL ORCHESTRAL INSTRUMENTS

Students who are sufficiently advanced in any of the above musical instruments will have opportunity of practice in string quartettes, trios, concertos, and symphonies of Beethoven, Mozart, and Haydn.

## RECITALS

Frequent recitals in the presence of the faculty and students of the School of Music and their friends are held to accustom students to playing in public, and for mutual improvement.

On the Friday evening prior to Commencement week a public recital of the School of Music is held in Bucknell Hall.

The public examination of those who desire certificates of proficiency is held in Bucknell Hall the Saturday afternoon before commencement. At this time each pupil plays or sings two pieces of high grade, and reads an essay on some subject connected with music.

## SPECIAL ADVANTAGES

Artists' Recitals. The opportunity of hearing good music rendered by artists of superior ability is very essential in connection with the classroom instruction. All students of the School of Music are urged to attend these concerts, as they are admitted without extra expense.

## TUITION

Tuition is charged for instruction in music, per semester, as follows:

	Full Course	Half Course	Quarter Course
Vocal .....	\$50.00	\$30.00	\$19.00
Piano or Organ .....	50.00	30.00	19.00
Violin .....	50.00	30.00	19.00
Supervisors' Course .....	50.00	30.00	19.00
Harmony, in private lessons .....	50.00	30.00	19.00
Harmony, in class .....	10.00		
Guitar and Mandolin, in class .....	10.00		
Use of Piano for practice (1 hr. daily) ..	5.00		
History, in class .....	10.00		
Use of Pipe Organ for practice (1 hr. daily)	15.00		

The regular charges for pupils residing in the Women's College will be as follows:

	Per Semester
Full Course in Music, (Theory classes included) .....	\$ 70.00
Use of piano for practice, (1 hour daily) .....	5.00
Board, room, heat, light, student budget, etc. ....	130.00

Special individual instruction in music, per lesson, \$2.00.

Full course implies two one-hour lessons per week, and theory.

Half course implies two half-hour lessons per week, and theory.

Quarter course implies one-half hour lesson per week, and theory.

No reduction is made except in case of protracted illness.

Instruction in the orchestra and in harmony is free to pupils otherwise studying music.

Payment strictly in advance beginning each semester.

### RESIDENCE OF MUSIC PUPILS

Pupils in music reside in the Women's College and are under the care of the Dean of the Women's College. Those who wish to make music a specialty are recommended to take at least one study each semester in Language or Literature.

The regular charges for pupils in music, residing in the Women's College are \$260 per annum. This does not include charges for instruction in music, which are determined by the number of lessons taken per week.

### GRADUATION IN MUSIC

Students who complete any of the Courses in Music and pass the examination, receive a certificate of proficiency. Students will not be taken as Fourth Year Pupils in Music until they have passed an examination before a committee consisting of members of the faculty and other appointed judges. Besides the examination before the Committee for admission to the Fourth Year, students will be required to pass a preliminary examination at the opening of the second semester, and a final examination before Commencement week. Students will not be admitted to the final examination unless they have passed the preliminary examination.

### THE AVIRAGNET PRIZE

Friends of the late Elysée Aviragnet have endowed a prize for excellence in Music. For 1919 this prize was given to DeWitt Kieffer Botts.

### THE DIRECTOR'S PRIZE

The Director of the School of Music offers an annual prize for excellence in the Science of Music. For 1919 this prize was awarded to Amy Pearl Sill.

### VOICE PRIZE

The Director, also, offers an annual prize for excellence in Voice. For 1919 this prize was awarded to Alden Eugene Davis.

### GENERAL REGULATIONS

Young women attending upon the School of Music are subject to the administration and other regulations enacted by the Board of Trustees for the government of students in the Women's College. Students of Music are also entitled to all the privileges of the Women's College.

# MUSIC

## GRADUATE STUDENTS

Name	Course	Address
Florence Edna Crabb	Piano	Winfield
Errol Hunt Derby	Violin	Scranton
Helen Gertrude Fisher	Piano	Lewisburg
Fannie Emmaline Grice	Piano	Lewisburg
Stephen Fraley Puff	Voice	Philadelphia
Rachel Mary Reed	Pipe Organ	Maplewood, N. J.
Ellen Mae Smith	Supervisor, Piano, Voice	Lewisburg
Hazel Tule	Piano	Milton

## FOURTH YEAR

Name	Course	Address
Norman Roy Appleton	Voice	Philadelphia
George Hobart Brown	Voice	Morristown, N. J.
Elthera Glenn Corson	Voice, Piano	Bridgeton, N. J.
Merrill Brown DeWire	Voice	Lewisburg
Homer Titus Eaton	Voice	Erie
Charles Edward Evans	Pipe Organ, Piano, Voice, Theory	Pottsville
Esther Marie Fleming	Violin, Theory	Paterson, N. J.
Ralph Franklin Hartz	Voice	Reading
Mary Ellen Harris	Voice, Theory	Lewisburg
Mittie Deborah Mark	Supervisor, Piano, Pipe Organ, Voice, Theory	Lewisburg
William Moyer *	Voice	Lewisburg
Marion Riess	Voice, Pipe Organ, Piano, Theory	Mercedes, Texas
Bertha Elizabeth Roush	Piano, Theory	Winfield
Julius Frederick Seebach, Jr.	Voice	New Philadelphia, Ohio
Howard A. Slayman	Voice	Mifflinburg
Esther Geneva Snyder	Supervisor, Voice, Piano, Theory	Elders Ridge
Edythe Susanna Statler	Voice	Johnstown
Marguerite Edna Stevenson	Pipe Organ, Piano, Theory	Berwick
Russell Stout	Voice	Cedarville, W. Va.

## THIRD YEAR

Name	Course	Address
Paula Annan	Piano	Emmitsburg, Md.
Edna Mary Baker	Piano	Lewisburg
Lambert Teufel Botts	Voice	Milton
Ella Brown	Voice	Milton
Evelyn Brubaker	Piano	Mifflinburg
Lydia Coene	Violin	Paterson, N. J.
Louise Frances Coombs	Piano, Theory	Philadelphia
Mabelle Ellyn DeSilva	Supervisor, Voice, Pipe Organ, Piano, Theory	Oxford
Frieda Eva Ebner	Piano, Theory	Glassboro, N. J.
Louise Kurtz Glover	Piano	Mifflinburg
Josephine Iva Green	Supervisor, Voice, Piano, Theory	Olean, N. Y.
Arthur Earl Harris	Voice	New Castle
Cecil McKee Hazen	Supervisor, Piano, Voice, Theory	Turtlepoint
James Leo Hess	Piano	Lewisburg
Eloise Ernestine Hill	Violin	Williamsport
Belva Charlotte Holdren	Supervisor, Piano Voice, Theory	Paxinos
Helen May Kerstetter	Voice	Lewisburg
Florence Mary Knopka	Pipe Organ, Piano	Shamokin
Lawrence Winters Lawson	Voice	Latrobe
Margaret McClure	Piano	Lewisburg
Margaret Morgan	Piano	Olyphant
Verna Elizabeth Moyer	Voice, Theory	Lewisburg
Bryson Clark Ocker	Violin, Piano, Theory	Selinsgrove
Mary Cooper Rhoads	Piano, Theory	Sunbury
Carl Stanley Schott	Violin	Sunbury
Amorita Muriel Sesinger	Piano, Theory	Pitman, N. J.
Lois M. Smith	Piano	Milton
Irma Matilda Shortess	Pipe Organ	Lewisburg
Viola Mae Showers	Voice, Piano, Theory	New Columbia
Roy Russell Stine	Violin	Tyrone
Ada Pauline Thomas	Supervisor, Piano, Voice, Theory	Pleasantville, N. J.
Martha Isabel Unger	Voice, Piano, Theory	Shamokin



## SECOND YEAR

Name	Course	Address
Ruth Allison Apgar	Piano	Roselle, N. J.
Eleanor Ballentine	Piano	Lewisburg
Jennie Banks	Piano	Lewisburg
Evelyn Mae Bennage	Piano, Theory	Milton
Cornelia Ruth Boyd	Piano	Dover, N. J.
Helen Grace Brungard	Piano	Mifflinburg
Mary Collins	Piano	Renovo
Lois Margaret Cruse	Piano, Theory	Picture Rocks
Margaret DeWees	Piano	Montrose
Elsie Mae Flexer	Piano	Sunbury
Arlene Ruth Gift	Piano	Sunbury
Mildred Alice Hayden	Piano	Greensburg
Edward Fielding Heim	Voice	Lewisburg
Madge Odean Heimbach	Piano	Lewisburg
Grant Oswald Herb	Piano	Snydertown
Hilda Irene Herold	Voice, Theory	Montgomery
Florence Elizabeth Horam	Voice	Lewisburg
Beulah Mae Hummell	Piano	Lewisburg
Carolyn Julia Hunt	Piano	Lewisburg
Lewis Leroy Hutchinson	Piano	Reading
Marshall H. Irvin	Piano	Lewisburg
Willam Jackson Irvin	Voice	Lewisburg
Jean Pearl Johns	Violin	Cresson
Sara Elizabeth Jones	Voice	Shamokin
Sarah Anna Kerstetter	Piano	Lewisburg
Charles Adolph Kieser	Violin	Milton
Helen Felicia Kitlowski	Voice	Nanticoke
Elsie Mildred Lamine	Piano	Milton
Rosanna Leiser	Piano	Sunbury
Jennie Leiby	Piano, Theory	Lewisburg
Corinne MacNamara	Piano	Thompson
Blanche Martin	Piano	Milton
Edna Martin	Piano	Lewisburg
Ralph Augustus Martz	Violin	Sunbury
Mary Vaughan Mervine	Piano, Theory	Milton
Henry Lewis Davis Moore	Voice	Bridgeton, N. J.
Kathryn D. Pettigrew	Voice	Olyphant
Ruth Adele Reuhl	Piano	Roselle, N. J.
Samuel Perry Rogers	Voice	Jeffersonville

Name	Course	Address
Elizabeth Russell	Voice	Watsontown
Irma Smith	Piano	Milton
Agatha Winifred Shipe	Piano	Sunbury
Florence Steele	Piano	Northumberland
Margaret Helen Trump	Piano	Derry
Ella LaRue Unger	Piano	Shamokin
Frances Edsall VanCleaf	Violin	Stockholm, N. J.
Elizabeth Montgomery Vincent	Piano, Voice, Theory	Northumberland
Kathyrine Miller Wagner	Voice, Piano, Theory	Lewisburg
Ruth Hamilton Weidenhamer	Piano	Lewisburg
Mary Jane Williamson	Voice	Charleroi
Frank Cott Wright	Voice	Latrobe

## FIRST YEAR

Name	Course	Address
Margaret Evans Abbot	Voice	Haddonfield, N. J.
Loura Elizabeth Almoney	Piano, Theory	Whitford, Md.
Dorothy Auer	Voice	Norristown
Mary Ethel Bailey	Piano	Latrobe
Ruth Hanna Brown	Piano	Ewan, N. J.
Evelyn Burpee	Piano	Lewisburg
Stanley Burpee	Piano	Lewisburg
Thomas Middleton Christley	Voice	Butler
Ruth Prettyman Clark	Piano	Collingswood, N. J.
Gertrude Anna Clipman	Piano, Theory	Mifflinburg
Nina Walker Cornwell	Voice	Northumberland
Isabelle Farrow Deibler	Voice	Shamokin
Esther Virginia Dodson	Piano	Haddonfield, N. J.
Myra Catherine Effinger	Violin	Altoona
Anna Marie Fisher	Voice	Reading
Grace Rau Follmer	Voice	Milton
Dorothy Margaret Freck	Piano	Sunbury
Helen May Gehrig	Piano	Milton
Donald Joseph Gensemer	Voice	Pine Grove
H. Kathryn Glase	Piano	Lewisburg
Richard Heckert	Violin-Cello	Sunbury
Chester Hendricks	Voice	Milton
Kenneth Hendricks	Voice	Milton
Martha Louise Hood	Piano, Voice	Saltsburg

Name	Course	Address
Ocie Viola Hunter	Voice	Allenwood
Elizabeth Hurst	Piano	Norristown
June Irvin	Piano	Lewisburg
Dorothy Irvin	Piano	Lewisburg
Luther Paul Ilgen	Violin	Mifflinburg
Margaret Johnston	Voice	Altoona
Ruth Kerstetter	Piano	Lewisburg
Lawrence Myron Kimball	Piano, Voice	Vineland, N. J.
Angeline Ruth Kissinger	Piano	Reading
Julia Agnes Kistler	Piano	Mifflinburg
Gertrude Mae Kistler	Piano	Lewisburg
Helen Esther MacFarland	Violin	Watsontown
Caldwell Mathias	Voice	Milton
Irene McAllister	Piano	McKeesport
Martha Grace McFadden	Piano	Lewisburg
Mary M. Meiser	Voice	Northumberland
Carl Adam Metz	Voice	Scranton
Rebecca Pearl Milliken	Piano	Lewisburg
Benjamin Stanley Moore	Piano	Pitman, N. J.
Skillman Earl Myers	Piano	Trenton, N. J.
Anna Aravilla Peters	Pipe Organ	Grampian
Margaret Elizabeth Rose	Piano, Violin	Lewisburg
Joe Rosenblum	Violin	Milton
Nelson Samuel Rounsley	Voice	Millerstown
Helen Dorothy Smith	Piano, Voice, Theory	Easton
Hannah Edith Steely	Voice	Shamokin
Sue Fisher Stroh	Piano	Sunbury
Bertha Gwen Thomas	Piano	Lewisburg
Howard Clark Thomas	Piano	Lewisburg
Martha Geneva Thomas	Piano	Lewisburg
Ruth Jane Thomas	Piano	Lewisburg
Charlotte Wilson VanCleaf	Voice	Stockholm, N. J.
Charlotte Volkmar	Voice	Williamsport
Sallie Grace Vickers	Piano	Youngstown, Ohio
Dorothy Wessner	Voice	Watsontown

## SUMMARY

Piano .....	85
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<hr/>	
Total Number of Lessons .....	450
Pupils .....	177

## GRADUATES, CLASS OF 1919

Name	Course	Address
Harry Andrews	Voice	Milton
Leo Balestreri	Voice	Milton
DeWitt Kieffer Botts, Ph.B.	Piano	Milton
Mary Evelyn Bright, B.A.	Voice	Rebersburg
Elsie Beryl Buckley	Supervisor, Piano, Pipe Organ, Voice, Theory	Port Alleghany
Derua Brittain Cathrall	Piano, Pipe Organ, Theory	West Pittston
Alden Eugene Davis, Ph. B.	Voice	Dickson City
Errol Hunt Derby	Violin	Scranton
Raymond Fasold	Voice	Sunbury
Fannie Emmaline Fisher	Piano, Theory	Lewisburg
Helen Gertrude Fisher	Piano, Theory	Lewisburg
Gladys Grace Hackenburg	Piano, Voice, Theory	Rebersburg
Helen Roberta Hoffa, Sc.B.	Piano	Lewisburg
Ruth Arlene Holden	Supervisor, Pipe Organ, Voice, Theory	Port Alleghany
Carrie Lantz	Voice	Sunbury
Raymond Plank Lewis, B.A.	Violin	Lewisburg
Ellen Elizabeth Peterson	Supervisor, Piano, Pipe Organ, Voice, Theory	Ralston
Mary Pauline Schenck	Voice	Morristown, N. J.
Amy Pearl Sill	Supervisor, Piano, Voice, Theory	Franklinville, N. Y.
Mary Dorothea Tooley	Voice	Danville

## DESIRABLE GIFTS

To persons willing to make contributions for Christian education, the following are suggested:

- (a) Professorships can be endowed for \$60,000 each.
- (b) Fellowships can be endowed for \$10,000 each.
- (c) Scholarships can be endowed by a gift of \$1,000 to \$5,000 each.
- (d) Additions can be made to the Loan Fund which has been established. The interest from this is loaned to students, the principal being kept intact.
- (e) A fund for the Retirement of Professors, who have completed the natural period of active service.

Each of these forms of beneficence will bear and perpetuate the name of the donor or of the person designated by him.

## FORM OF BEQUEST

To persons desiring to aid in increasing the efficiency of the University in the work of preparing young men and young women for usefulness, the following form of bequest is recommended:

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of..... Dollars for general purposes, according to the Act of Assembly, incorporating the same.

### Or if for a Special Purpose:

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of ..... Dollars for the establishment of a professorship, fellowship, scholarship, loan fund, or retirement fund, to bear and perpetuate the name of ..... forever.



## ANNUITIES

Gifts will be accepted by the University upon which it agrees to pay an annuity during the life of the donor.

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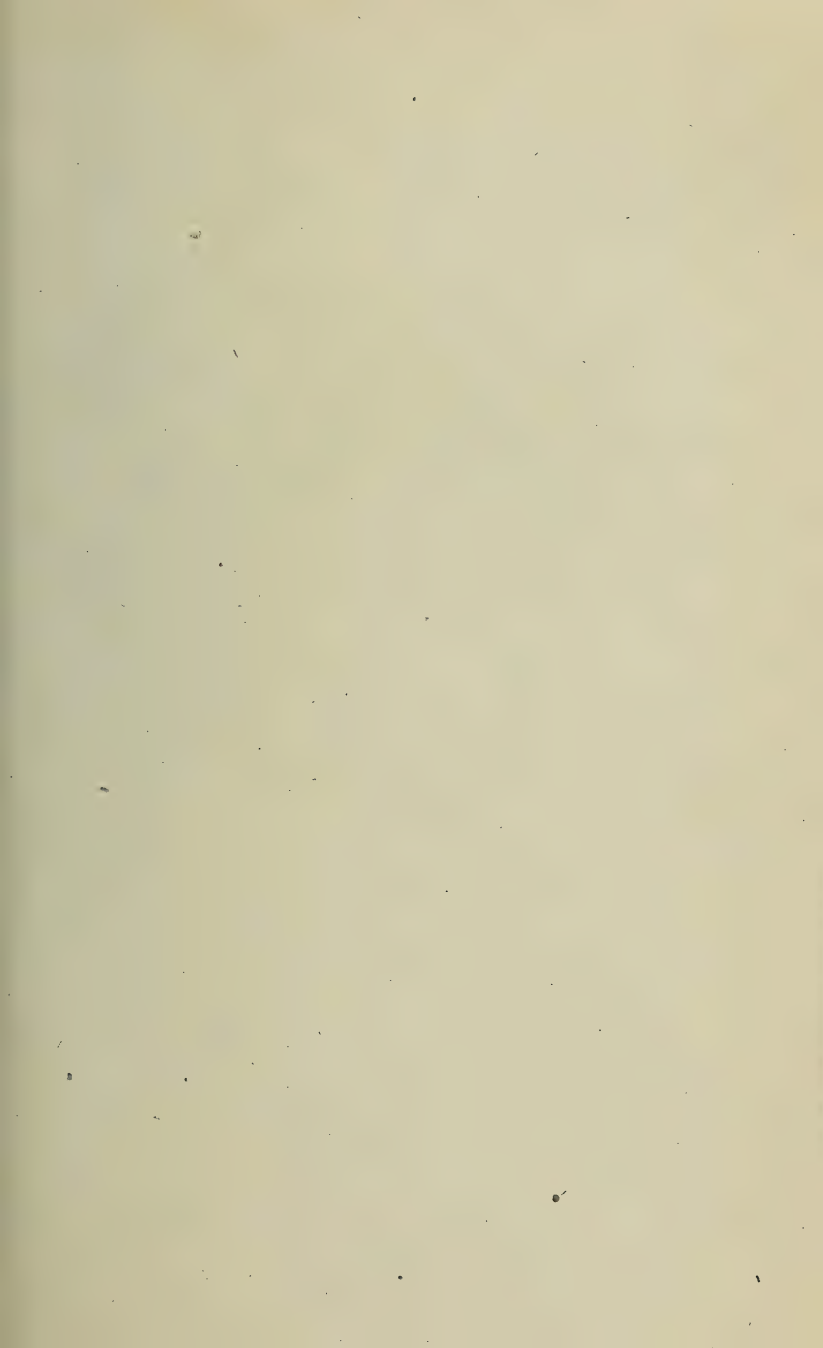
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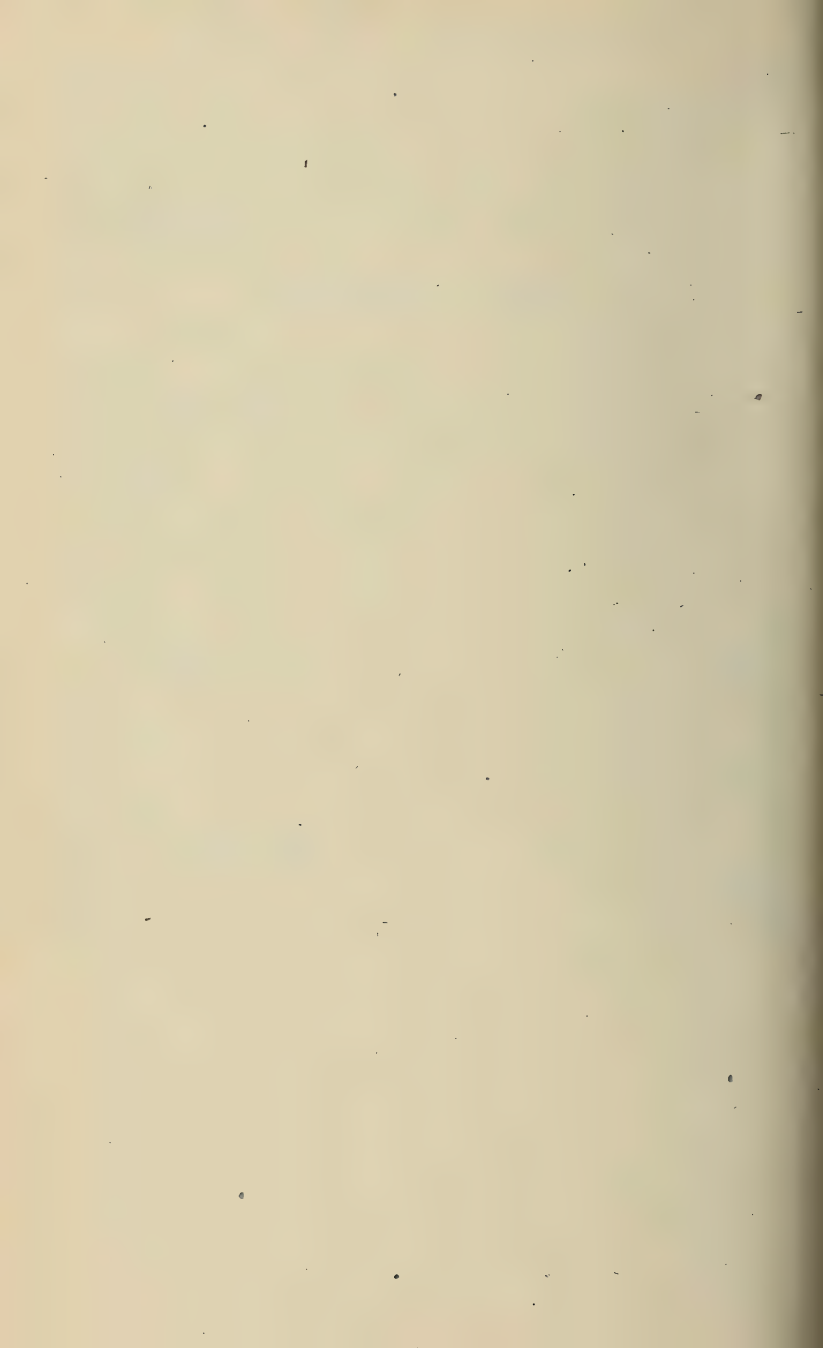
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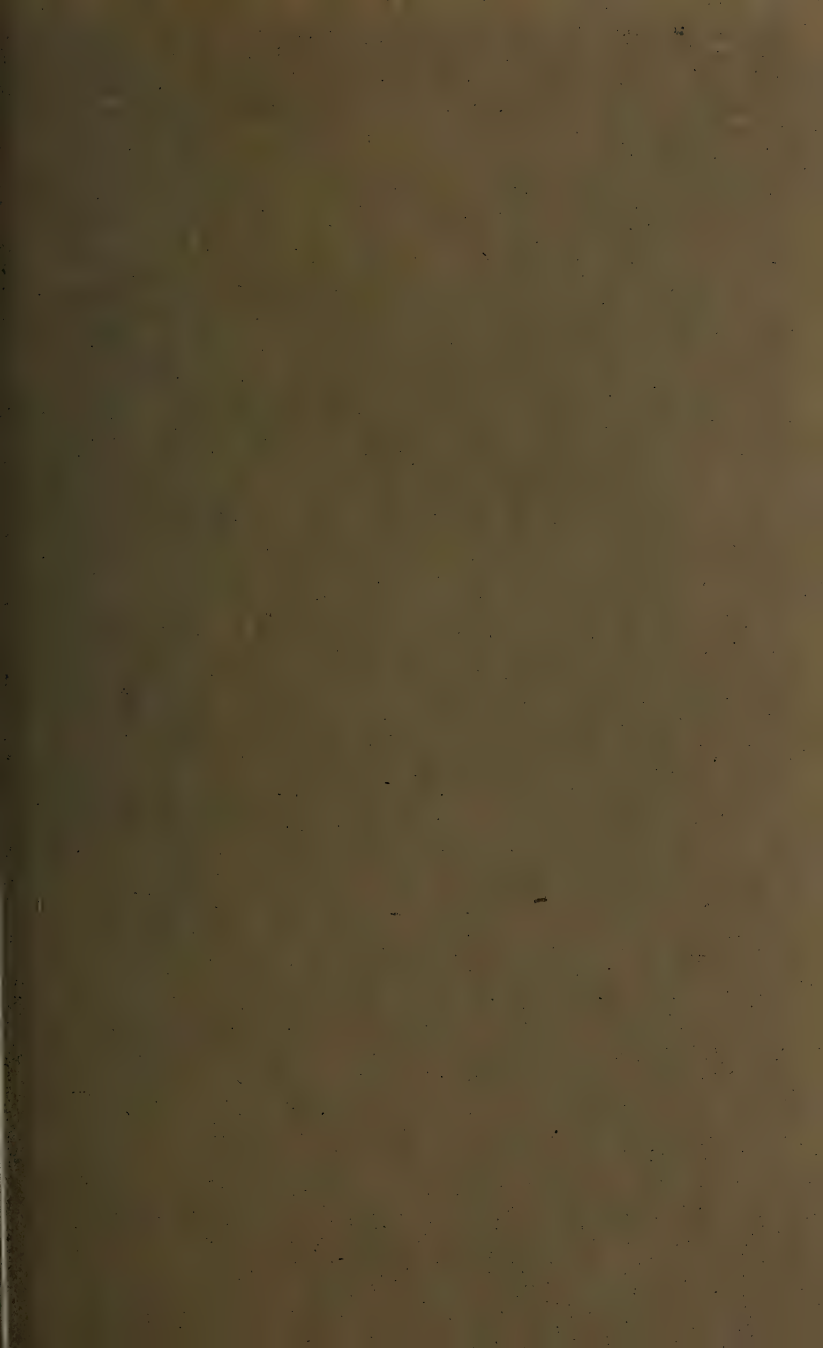
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UNIVERSITY OF ...  
JUN 5 1922

# Bucknell University Bulletin



**Annual Catalogue**

**1920-1921**









CATALOGUE  
OF  
BUCKNELL UNIVERSITY



SEVENTY-FIRST YEAR  
1920---1921

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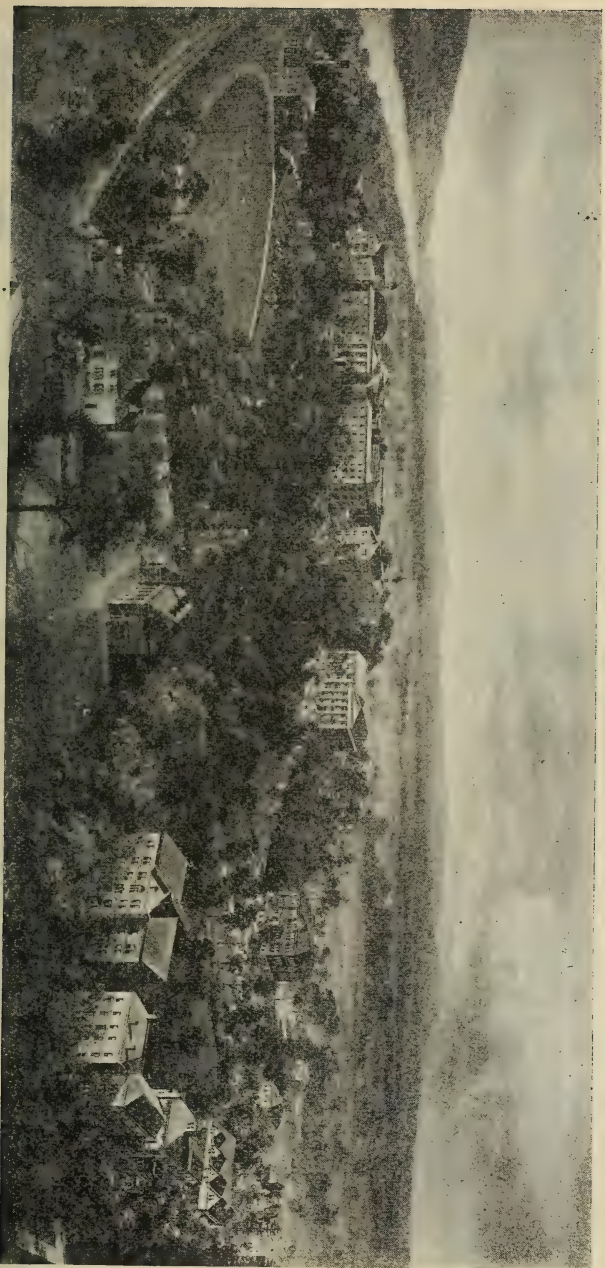
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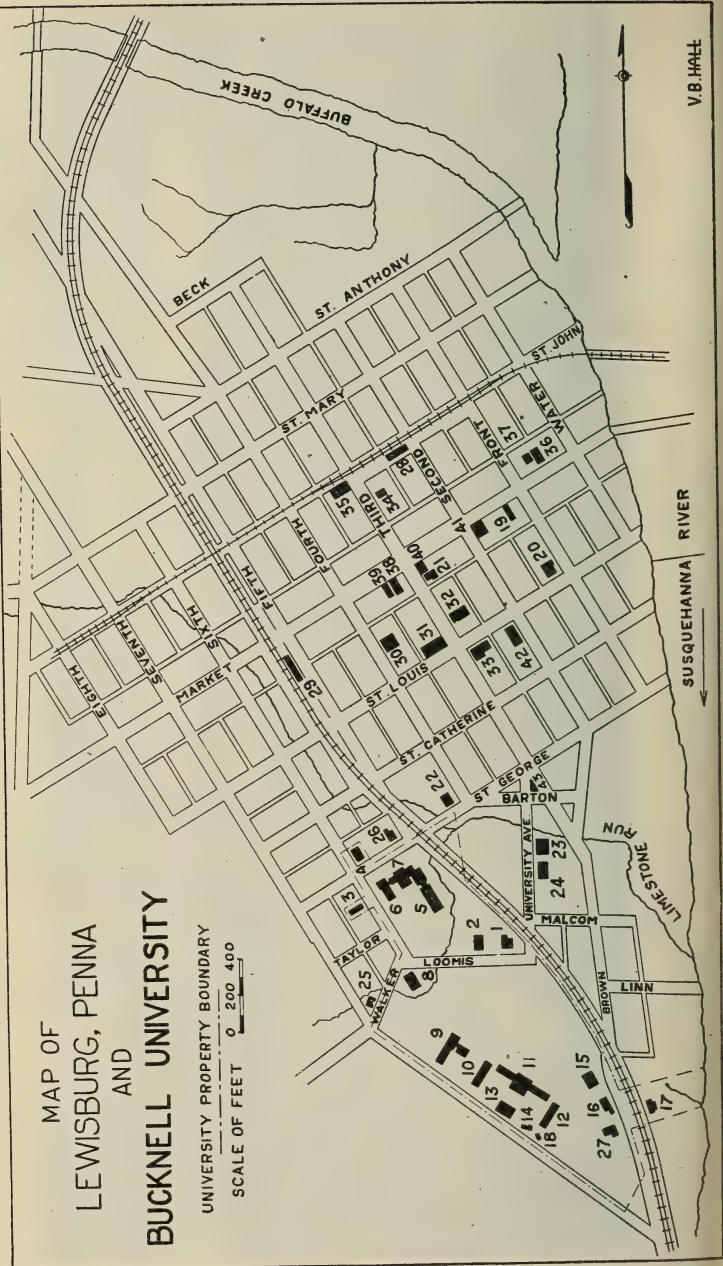


Bird's Eye View of the University

# MAP OF LEWISBURG, PENNA AND BUCKNELL UNIVERSITY

UNIVERSITY PROPERTY BOUNDARY

SCALE OF FEET 0 200 400



## University Buildings

1. The President's Residence
2. Bucknell Hall
3. Bower House
4. Wolfe House
5. New Residence Hall
6. Bucknell Cottage
7. Women's College
8. Chemical Laboratory
9. Biological Laboratory
10. West College
11. Main Building
12. East College
13. Carnegie Library
14. Observatory
15. Tustin Gymnasium
16. Power House
17. Foundry

18. College Inn
19. Delmar Inn

## Fraternities

20. Lambda Chi Alpha
21. Phi Kappa Psi
22. Sigma Alpha Epsilon

23. Kappa Sigma
24. Phi Gamma Delta
25. Sigma Chi
26. Delta Sigma
27. The Forum. (Gamma Lambda Sigma).

## Railway Stations

28. Pennsylvania R. R.
29. Reading R. R.

## Churches

30. Evangelical
31. Baptist
32. Methodist Episcopal
33. Lutheran
34. Christian
35. Reformed
36. Presbyterian

37. Himmelreich Library
38. Post Office
39. Union National Bank
40. Lewisburg Trust and Safe Deposit Co.
41. Lewisburg National Bank
42. Court House
43. Soldiers and Sailors Monument.



# 1921-1922

## February

S	M	T	W	T	F	S
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>					

## March

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		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		

## April

S	M	T	W	T	F	S
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<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>

## May

S	M	T	W	T	F	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>
<b>29</b>	<b>30</b>	<b>31</b>				

## June

S	M	T	W	T	F	S
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>		

## September

S	M	T	W	T	F	S
					<b>1</b>	<b>2</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	

## October

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>	<b>31</b>					

## November

S	M	T	W	T	F	S
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			

## December

S	M	T	W	T	F	S
					<b>1</b>	<b>2</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
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## January

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## May

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## June

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Dates printed in bold-faced type are those upon which the College is in session.



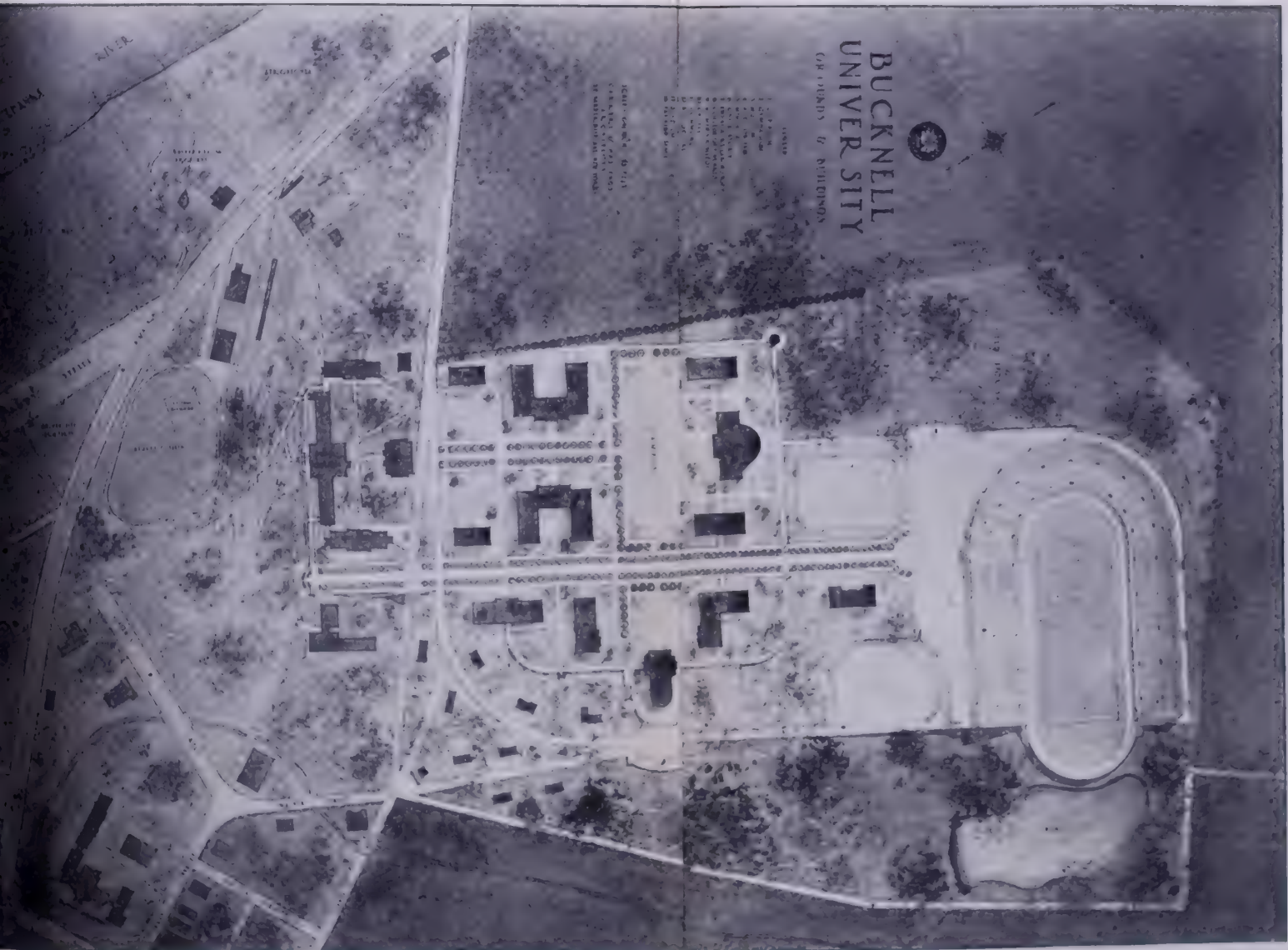


# BUCKNELL UNIVERSITY

GRADUATE & BUILDINGS

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BUCKNELL UNIVERSITY  
LEWISBURG, PA. 17033  
PH 717/541-1000



## CALENDAR FOR 1921-1922

### 1921

January 31.....	First Semester Ends
February 1.....	Second Semester Begins
February 22.....	Holiday
March 23-30.....	Spring Recess
May 30.....	Holiday
June 10.....	Second Semester Ends
June 12.....	Baccalaureate Sunday
June 14.....	Alumni Day
June 15.....	Annual Commencement
September 12-13.....	Registration of Freshmen
September 14.....	First Semester Begins
November 23-28.....	Thanksgiving Recess
December 21-January 4.....	Christmas Recess

### 1922

January 31.....	First Semester Ends
February 1.....	Second Semester Begins
February 22.....	Holiday
April 12-19.....	Spring Recess
May 30.....	Holiday
June 9.....	Second Semester Ends
June 11.....	Baccalaureate Sunday
June 13.....	Alumni Day
June 14.....	Annual Commencement

Bucknell University is located at Lewisburg, Pennsylvania, on the Pennsylvania and Reading Railroads, about sixty miles north of Harrisburg. On the Pennsylvania Railroad passengers change cars at Montandon.

## CORPORATE RIGHTS

The University was incorporated with full university powers by the Legislature of Pennsylvania in an Act approved by the Governor on the fifth day of February, 1840. The management of the University is committed to a Board of Trustees that is self-perpetuating. The Charter provides "That said trustees shall not for any cause, or under any pretext whatever encumber by mortgage, or otherwise, the real estate or any other property of said institution: That no religious sentiments are to be accounted as a disability to hinder the election of an individual to any office among the teachers of the institution, or to debar persons from admission as students, in any department of the University".

## ORGANIZATION

The University is composed of the College and of the School of Music.

## BENEFACTORS OF BUCKNELL UNIVERSITY

The total property of the Institution exceeds one million dollars. The productive endowment amounts to about five hundred and ninety-two thousand dollars. All this property has been given by friends of education, numbering several thousand persons. Founders of the Institution, that is Benefactors who have given ten thousand dollars or more have been: David Jayne, John Price Crozier, William Bucknell, Samuel Alrich Crozer, Harry Samuel Hopper, Harry Bucknell Hopper, John D Rockefeller, Catharine A. Went Charles Miller, John J. Carter, Henry Kirke Porter, David Porter Leas, Andrew Carnegie, Louise Bucknell Little, Joseph Kerr Weaver

Patrons (those who have given one thousand dollars or more, but less than ten thousand) have been: Charles F. Al



bott, Ralph A. Amerman, E. A. Armstrong, Francis W. Ayer, Benjamin Bear, William P. Beaver, Martin Bell, Emma W. Bucknell, Washington Butcher, Simon Cameron, Levi B. Christ, Elisha A. Coray, William J. Coxey, Nettie Dunham Crary, Samuel J. Creswell, George K. Crozer, J. Lewis Crozer, Mrs. J. Lewis Crozer, Robert H. Crozer, John C. Davis, Thomas Y. England, Isaac Ford, Mrs. Isaac Ford, Benjamin Gartside, Mary W. Getter, Thomas A. Gill, Leroy Gleason, Calvin Green, Benjamin Griffith, Calvin A. Hare, John H. Harris, George Hyde, James Irving, Israel James, E. C. Jayne, Adam Johnston, John D. Johnson, William W. Keen, William B. Leas, Alexander M. Lloyd, Justin R. Loomis, Freeman Loomis, William H. Ludwig, J. C. McKinney, S. E. McVitty, Joseph Meixell, George Barron Miller, George F. Miller, James Moore, James Moore, Jr., H. J. Mulford, Jacob G. Neafie, Christian Overholt, A. C. Overholt, Maria Overholt, George Porter, Jacob Reese, A. J. Rowland, J. C. Sibley, George M. Spratt, Orlando W. Spratt, W. H. Starbuck, Amos B. Still, James B. Stephenson, John B. Stetson, James S. Swartz, Francis J. Torrance, Ernest L. Tustin, N. Stewart Wall, Charles S. Walton, Martha England Walton, Thomas Wattson, Samuel Wolf, Simon P. Wolverton, S. D. Young, Roy G. Bostwick, John T. Judd, Anna L. Reilly, S. Lewis Ziegler.

By act of the Board of Trustees, the names of Founders and Patrons will be recorded in the Annual Catalogue of the University forever.

## A MOVEMENT TO INCREASE FUNDS

The Board of Trustees is engaged in a movement which is intended to add a million dollars to the endowment and to secure a half million for additional equipment.



## THE BOARD OF TRUSTEES

---

JAMES S. SWARTZ, A.M., Chairman 11 Broadway, New York City

ERNEST L. TUSTIN, LL.D., Vice-Chairman,

1420 Chestnut St., Philadelphia

\*A. JUDSON ROWLAND, D.D., LL.D., Secretary,

4423 Spruce St., Philadelphia

JOHN T. JUDD, D.D., Treasurer, Lewisburg

RALPH A. AMERMAN

Scranton

ROY G. BOSTWICK, A.M., LL.B.

Pittsburgh

JOHN WARREN DAVIS, LL.D.,

Trenton, N. J.

OLIVER J. DECKER, A.B.

Williamsport

MILTON G. EVANS, D.D., LL.D.

Chester

JOHN H. HARRIS, Ph.D., LL.D.

Lewisburg

H. BOARDMAN HOPPER

Philadelphia

LINCOLN HULLEY, Ph.D., LL.D.

Deland, Florida

JOHN D. JOHNSON

Philadelphia

ALBERT W. JOHNSON, A.B.

Lewisburg

RUSH H. KRESS, Ph.B.

New York City

JOHN H. MACALPINE

Pittsburgh

CHARLES MILLER, A.M.

Franklin

FRANK W. PADELFORD, D.D.

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LEROY STEPHENS, D.D.

Lewisburg

CHARLES P. VAUGHAN

Philadelphia

JOSEPH K. WEAVER, A.M., M.D.

Norristown

CLARENCE A. WEYMOUTH, Sc.B.

Philadelphia

S. LEWIS ZIEGLER, M.D., LL.D.

Philadelphia

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\*Deceased.

## MEETINGS OF THE BOARD

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The annual meeting is held on Tuesday of Commencement Week at Lewisburg.

The semi-annual meeting is held on the third Friday in February in Philadelphia.

## COMMITTEES OF THE BOARD

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### COMMITTEE ON INSTRUCTION

Ernest L. Tustin, Chairman

R. A. Amerman	Lincoln Hulley
J. W. Davis	F. W. Padelford
M. G. Evans	Leroy Stephens
E. W. Hunt, ex-officio	

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### COMMITTEE ON FINANCE

J. S. Swartz, Chairman

R. A. Amerman	E. L. Tustin
J. W. Davis	C. P. Vaughan
H. B. Hopper	C. A. Weymouth
Rush H. Kress	J. K. Weaver
J. H. MacAlpine	
E. W. Hunt, ex-officio	

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### COMMITTEE ON BUILDINGS AND GROUNDS

J. T. Judd, Chairman

O. J. Decker	Charles Miller
A. W. Johnson	S. L. Ziegler
E. W. Hunt, ex-officio	

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### COMMITTEE ON PUBLICATIONS

Leroy Stephens, Chairman

M. G. Evans	Roy Bostwick
E. W. Hunt, ex-officio	

## PRESIDENTS OF THE UNIVERSITY

1846-1851 STEPHEN W. TAYLOR, LL.D.

1851-1857 HOWARD MALCOM, D.D., LL.D.

1858-1879 JUSTIN ROLPH LOOMIS, Ph.D., LL.D.

1879-1888 DAVID JAYNE HILL, LL.D.

1889-1919 JOHN HOWARD HARRIS, Ph.D., LL.D.

1919- EMORY WILLIAM HUNT, D.D., LL.D.

# BUILDINGS AND EQUIPMENT

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## THE MAIN COLLEGE

The Main College is situated on a hill one hundred feet above the Susquehanna River. It was erected in 1859. It was designed by Thomas U. Walter, LL.D., architect of the dome and wings of the Capitol at Washington, D. C. It is Grecian in style. The building has a facade of three hundred and twenty feet. The central portion is eighty feet square, and is strengthened in front by four massive columns. On the first floor are six recitation rooms. On the second floor are the Museum of Natural History and recitation rooms.

On the third floor is Commencement Hall, with a seating capacity of fifteen hundred.

The Wings on the eastern and western sides, respectively, of the Main Building, are each one hundred and twenty feet in length and four stories in height. They are used for dormitory rooms, recitation rooms, and offices. The dormitory rooms have been thoroughly modernized. The West Wing was erected in 1850; the East Wing in 1859.

## THE WEST COLLEGE

The West College was erected in 1900. It is four stories in height, and is built of brick trimmed with brownstone. It contains ninety-seven rooms. One of the rooms is a hall for the use of the Young Men's Christian Association; the others are used for dormitory rooms.

## THE EAST COLLEGE

The East College was erected in 1907. It is built of brick, trimmed with brownstone. The first story contains the Electrical Laboratory, the Physical Laboratory and reci-

tation rooms. The top floor is used for draughting rooms. The other four stories contain one hundred and twelve-dormitory rooms.

### THE FIRST BUILDING

The First Building on College Hill was erected in 1846. It is fifty feet in width by eighty feet in length, and three stories in height. The building will be used as a Laboratory of Biology.

### BUCKNELL COTTAGE FOR MEN

The Bucknell Cottage for men was erected in 1889. It is contiguous to the First Building and is connected with it by a covered passageway. The building contains recitation rooms.

### BUCKNELL HALL

Bucknell Hall was erected in 1886. It is the Chapel of the College.

### THE CARNEGIE LIBRARY

The Carnegie Library was given by the Honorable Andrew Carnegie, D.C.L., in the year 1905. The building is sixty-four feet by ninety feet. It is built of brick, trimmed with brownstone. The center, thirty feet by ninety, is used as a reading room. At the height of sixteen feet there is a gallery extending around the room. The sides, each fifteen feet by ninety, are divided, on the first floor, into rooms for special collections and for offices. The second floor will be used for stack rooms. The building will accommodate about one hundred thousand volumes.

### THE OBSERVATORY

The Observatory was erected in 1887 and enlarged in 1905. It is designed for the use of students in Practical Astronomy. The equipment consists of a Clark Equatorial

Telescope of ten inches aperture and  $12\frac{1}{2}$  feet focal length, furnished with a position Micrometer and the usual accessories; a Spectroscope, with prism and grating by Brashear; a three-inch prismatic Transit, with a nine-wire movable Micrometer, a Fauth Chronograph with Bond Spring Governor; a Waldo Precision Clock for siderial time, with mercurial compensation, break circuiting apparatus; Daniell's battery and telegraph sounders; a Seth Thomas Clock for solar time; a Sextant; Celestial globes and maps, and standard works on Theoretical and Practical Astronomy.

### THE FOUNDRY

The Foundry was erected in 1915. It is built of brick and is fitted up with appliances requisite for the courses in molding and casting.

### HEATING AND LIGHTING PLANT

The Heating and Lighting Plant was erected in 1901. From this central plant all heat, light and power used by the University are obtained.

### THE PRESIDENT'S HOUSE

At the entrance to the Campus from University Avenue is located the President's house.

### THE GROFF HOUSE

The Groff house, with the adjoining land, formerly the property of Professor George G. Groff, is now the property of the University.

### THE TUSTIN GYMNASIUM

The Tustin Gymnasium was erected in 1890. The first story is built of stone and contains an office for the director, lockers, dressing rooms, and shower baths. The second story is built of brick, rising twenty-two feet from the main floor to the roof line. At the height of twelve feet a running-track gallery, six feet wide, surrounds the room.



## THE ATHLETIC FIELD

The Athletic Field is conveniently located at the foot of "College Hill". Around the space devoted to football and baseball, runs a quarter-mile track. Close to the track on the southern side is the Tustin Gymnasium, easily accessible to students and trainers.

## BUILDINGS OF THE WOMEN'S COLLEGE

The buildings and campus of this department are set apart for the use of women taking courses in the College and in the School of Music.

The Main Building was erected in 1857; the South Wing, in 1870. It contains an office for the Dean, a reception room, parlors, living-room, dining-hall, and dormitory rooms. On the third floor of this building is the Laboratory for the department of Home Economics.

The Bucknell Cottage was erected in 1889. It stands to the southwest of the Main Building, and is connected with it by an enclosed passageway. It is used as a dormitory for women.

A new residence hall for women was erected in 1905. The gymnasium occupies the upper story of this building, and has a floor surface of over four thousand feet.

Two additional residence buildings adjoining the campus have recently been secured. Each of these accommodates about twenty college women.

The Campus of the Women's College is separated from the main College grounds by Loomis Street.

## LABORATORIES

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### The Biological Laboratories

The Biological Laboratories are equipped with apparatus for carrying on the work in the Organic Sciences. Rooms have been equipped for the various courses and are well supplied with microscopes, microtomes, incubators, and the necessary reagents. The laboratories are also supplied with collecting apparatus, books of reference and other necessary appliances. New apparatus is added as occasion demands. The work in Zoology is illustrated by marine and fresh water forms, skeletons and mounted specimens. An anatomical museum of dissections has been built up in the last few years by the department of Zoology.

The Physiological Laboratory has recently been equipped with stimulating apparatus, kymographs, heart and muscle levers, spirometers, pneumographs, ergographs and other apparatus suitable for a well-rounded laboratory course in beginning or advanced work.

Material for Human Anatomy is received from the State Anatomical Board, and each student has the opportunity to dissect the human body. The student in Microscopic Anatomy has a good supply of paraffin and celloidin blocks. The work is illustrated with microscopic slides, alcoholic material and French wax models. Each student must provide himself with dissecting instruments.

During the past year a large Bacteriology Laboratory, and a room for the preparation and sterilization of media, have been furnished. The new equipment installed in these laboratories includes: an autoclave, Arnold sterilizers, an electric instrument sterilizer, Lautenschlaeger hot air sterilizers, constant temperature water baths, constant temperature electric incubators, a high power International electric centrifuge, a shaking machine for preparation of bacterial

emulsions, a Jewell type automatic water still, blast lamps, etc. Each laboratory is supplied with running hot and cold water, and with gas and electric service.

### **The Electrical Laboratory**

The Electrical Laboratory is located on the ground floor of East College and consists of the dynamo laboratory proper, and the instrument room for the safe keeping of portable and precision apparatus. The lecture and demonstration room adjoins the laboratory. These combined rooms furnish a total floor space of approximately 2,600 square feet and contain the apparatus for the laboratory work of the various courses in electrical engineering.

The direct current apparatus includes several direct current motor equipped generating sets; shunt, compound, and series motors with prony brake for testing purposes, and numerous other special devices for engineering and commercial tests. A 25 KW engine driven direct current generator is available for power plant efficiency tests and other experimental work. This apparatus is so chosen and erected as to make a detailed study complete and convenient.

The alternating current apparatus consists of various types of single phase, two phase, and three phase generators, single and polyphase induction motors, rotary converter, synchronous motors, and all necessary measuring instruments for performing engineering and commercial tests. Apparatus used is of frequencies varying from 25 cycles to 500 cycles.

The high tension equipment includes all the transformers, most of which are of the commercial type, others are special in their design and construction, and were built by the students in the department. The equipment also includes a Tesla coil with a thirty-six inch spark. This was built by the students of the department and operates with

remarkable success. A complete oscillograph equipment with all the necessary accessories for the study of phase relations and higher harmonics in alternating current circuits forms a very valuable adjunct to the laboratory equipment.

The apparatus for the work in telegraphy and telephony comprises the essentials for simple telegraph circuits, duplex, diplex and quadruplex telegraphy including relays and repeaters. Simple magneto apparatus and several standard types of common battery apparatus are available for study in telephony.

A standard 1 KW radio set with 225-foot aerial, having a transmitting radius of 100 to 1,000 miles, depending upon conditions, furnishes an excellent equipment for students in this line of work. This is also equipped with various forms of receiving devices, and a wave meter for studying the wave lengths of distant stations.

### The Chemical Laboratory

The Chemical Laboratory is forty-three feet wide and eighty-six feet long, and has two stories and a basement. The first story contains a lecture room seating one hundred and twenty, and a freshman laboratory with ninety-six lockers accommodating forty-eight students at one time. It also has two stock rooms and a preparation room. The second story contains the library and balance room, offices, and the organic, quantitative, and physical chemistry laboratories. The basement, two-thirds above ground, contains three laboratories, supply rooms, dark room, lavatories, etc. All laboratories are supplied with hoods connected with a forced draft system actuated by an electric fan. There is ample equipment for the courses offered. The laboratory will be enlarged this year to the extent of one-third of its original size.

### The Physical Laboratory

The Physical Laboratory occupies the West side and, jointly with the department of Electrical Engineering, the South end of the East College. The three rooms on the West side are devoted chiefly to the study of mechanics, heat, light, and sound. They are fully equipped with permanent shelves and piers for carrying delicate apparatus, and also many portable tables for general purposes. They are well lighted and supplied with water, gas, and electricity.

The equipment of the mechanics laboratory includes certified standards for measuring time, length and mass, and includes a seconds pendulum, a standard meter, cathetometers, traveling microscopes, precision balances and weights.

For the study of heat, the apparatus includes a complete set of mercury-in-glass thermometers, air thermometers, platinum resistance thermometers and auxiliary apparatus, thermo-couples, calorimeters for the determination of the heat value of solid, liquid and gaseous fuels. Several types of apparatus are available for the determination of the Mechanical Equivalent of heat.

The light laboratory is equipped with a large number of lenses and mirrors, spectrometers and spectroscopes, including one by Brashear fitted with a Rowland grating of 14,438 lines to the inch, and a constant deviation type by Hilger with photographic attachment. The equipment is complete for the qualitative study of the spectra of solids, liquids, and gases. Several optical benches are fitted with different types of photometers, and one precision photometer, carrying a Lummer-Brodhun screen, is mounted for the study of electric lamps.

The electrical equipment includes a large number of galvanometers of the various types; standard cells; stan-



dards of resistance, capacity and inductance; several types of the Wheatstone bridge; the Carey-Foster bridge; Kelvin Double bridge; Kelvin Balance; Siemens Dynamometer; a large number of the Weston portable voltmeters and ammeters; several types of potentiometers from American and foreign makers. In connection with the Electrical Engineering department, much apparatus is available which is described under the equipment of that laboratory.

### Home Economics Laboratory

The Home Economics Laboratory is located on the third floor of the Main Building at the Women's College. The cooking laboratory is equipped for twenty-four students. A dining-room and kitchen are suitably furnished and used in connection with the planning and serving of meals.

The sewing room is on the second floor of the Bucknell Cottage. It is provided with sewing machines and other necessary equipment for the teaching of sewing.

### THE DRAWING ROOMS

The upper floor of the East College is devoted to Drawing. The rooms are lighted by sky-lights, and are fitted with locker and desk space for one hundred students. The center room is used for the Freshmen Drawing, the South room for Sophomore Drawing, the North room for Senior work in the Electrical Engineering course. The advanced drawing rooms for Civil and Mechanical Engineers are on the first floor of East College and the first floor of East Wing.

The drawing department is provided with a dark room for blue printing which has an electric printing machine, and is equipped for washing and drying the prints.



## THE MUSEUM

The University possesses good collections of illustrative material in Botany, Zoology, Histology, Geology and Mineralogy. Parts of these collections are kept in the laboratories and used in classroom work.

Since the erection of the Carnegie Library two large rooms in this building have been set aside as a Biological Museum. The collections of mounted birds and mammals have been transferred to these rooms. A special effort is being made to secure additions to this museum. Skeletons of vertebrates and skins of birds and mammals are especially desired.

The Geological Museum has been greatly enlarged during the past ten years, and many valuable specimens have been added.

During the past twenty-five years there has been built up a remarkable collection of Indian Relics. The collection includes some of the finest specimens from the Murray Nesbit collection, also the Gerner Collection from Muncy, Pa., besides thousands of specimens collected along the West Branch of the Susquehanna between Sunbury and Williamsport.

## THE LIBRARY

The general Library contains over forty thousand volumes, besides many thousand pamphlets. The Reading Room is connected with the Library and offers facilities for reading, studying, and writing. During term time both are open forenoon, afternoon and evening of each day, Sundays and holidays excepted. By the kindness of the Class of 1917, the Library is now well lighted with electricity. Students in all departments have free access to the shelves, and may draw two books at one time and retain them for two weeks, with the privilege of one renewal, if desired. On

special designation by instructors, certain books in constant use by classes are excepted from general circulation, during specified times, or during the continuance of the study.

For greater convenience of instructors and students, collections of special technical books are also kept in the Laboratories of the Biological, Physical and Organic Sciences, in the Astronomical Observatory, and in specially designated classrooms.

### ART COLLECTION

An Art Collection of paintings, engravings, heliotypes, photographs, bronzes and casts of sculpture has been accumulating for some time, and is accommodated in the Carnegie Library. Recent valuable additions include the Loomis Collection, gathered in Italy by the late President Justin Rolph Loomis, LL.D., the gift of his children, Andrew Gregg Loomis, Esq., and Mrs. Carrie Loomis Owens.



Bucknell University

The College



# THE COLLEGE

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## OFFICERS OF ADMINISTRATION

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EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
President Emeritus

LEWELLYN PHILLIPS, D.D.  
Dean

ANNA ROBERTA CAREY, A.M.  
Dean of Women

CHARLES ARTHUR LINDEMANN, A.M.  
Secretary of the Faculty

THERON CLARK  
Registrar

MARY HELEN HUNT, A.B.  
Recorder and Secretary to the President

FRANK EUGENE BURPEE, A.M.  
Superintendent of Buildings and Grounds

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## FACULTY

---

EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
Professor of Philosophy

WILLIAM CYRUS BARTOL, A.M., Ph.D.  
Professor of Mathematics and Astronomy

FRANK ERNEST ROCKWOOD, A.M., LL.D., D.C.L.  
Professor Emeritus of the Latin Language and Literature



WILLIAM GUNDY OWENS, A.M.

Professor of Chemistry

\*ENOCH PERRINE, R.M., Litt.D.

Professor of the English Language and Literature

THOMAS FRANKLIN HAMBLIN, AM., LL.D.

New Jersey Professor of the Greek Language and Literature

WILLIAM EMMET MARTIN, A.M., L.H.D.

Professor of Logic and Sociology

NELSON FITHIAN DAVIS, Sc.D.

Professor of Biology

EPHRAIM M. HEIM, A.M., Ph.D.

Professor of Economic and Political Science

LLEWELLYN PHILLIPS, A.M., D.D.

John P. Crozer Professor of Education

HENRY THOMAS COLESTOCK, A.M., Ph.D.

Professor of History

CHARLES ARTHUR LINDEMANN, A.M.

Professor of Civil Engineering

FRANK MORTON SIMPSON, Sc.M.

Professor of Physics

WALTER KREMER RHODES, A.M., E.E.

Professor of Electrical Engineering

FLOYD GEORGE BALLENTINE, A.M., Ph.D.

Professor of the Latin Language and Literature

FRANK EUGENE BURPEE, A.M.

Professor of Mechanical Engineering

MARTIN LINNAEUS DRUM, A.M.

Professor of Surveying

NORMAN HAMILTON STEWART, A.B., Sc.M.

Professor of Biology

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\*Deceased.

BENJAMIN W. GRIFFITH, A.M.  
Professor of Romance Languages

GLENN VINTON BROWN, Ph.D.  
Professor of Chemical Engineering

CHARLES CARPENTER FRIES, A.M.  
Professor of English

PAUL GEORGE STOLZ, A.M.  
Professor of Music

ANNA ROBERTA CAREY, A.M.  
Professor of Home Economics

LEO LAWRENCE ROCKWELL, A.M.  
Professor of German and English

GEORGE FRED RASSWEILER, Ph.B., A.M., B.O.,  
Professor of Public Speaking

AMOS LEE HEROLD, A.M.  
Professor of English Literature

E. BELFORT S. de MAGALHAES  
Associate Professor of Romance Languages

HARRY SCHEIDY EVERETT, A.M., Sc.M.  
Assistant Professor of Mathematics

WILLIAM HILLIARD SCHUYLER, B.S. in Ch.E.  
Assistant Professor of Chemistry

JOHN WILLIAM RICE, Sc.M.  
Assistant Professor of Biology

GENEVIEVE BOLAND, A.M.  
Assistant Professor of Romance Languages

VORIS BLAINE HALL, Sc.M. in E.E.  
Instructor in Physics

VERA COBER ROCKWELL, A.B.  
Instructor in Spanish

JOHN STEINER GOLD, B.S.  
Instructor in Mathematics

HERBERT CLAIR GREENLAND, A.B.

Instructor in English

GEORGE ALLISON IRLAND, B.S. in E.E.

Instructor in Electrical Engineering and Drawing

GEORGE LOXLEY LOWRY, B.S.

Instructor in Mathematics

GEORGE MERRILL KUNKLE, Sc.M. in M.E.

Instructor in Mechanical Engineering

BENJAMIN JAMES WILSON, B.S. in M.E.

Instructor in Mechanical Engineering

FLORENCE FOWLER

Instructor in Sewing

OLIVE DOUGLASS, B.S. in H.E.

Instructor in Dietetics

SARA KISTLER BROWN, B.S.

Instructor in Chemistry

ALBERT WILLIAM JOHNSON, A.M.

President Judge, Seventeenth Judicial District, Lecturer on Real and  
Personal Property

CLOYD NILLIS STEININGER, A.M.

Attorney-at-Law, Lecturer on Bills and Notes

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## COMMITTEES OF THE FACULTY

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### ADVANCED DEGREES

Professor Davis, Chairman

Professors Ballentine, Drum, Griffith and Rhodes

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### ADMISSION AND REGISTRATION

Professor Rhodes, Chairman

Professors Colestock, Drum, Fries, Hamblin, Owens, Rockwell and  
Assistant Professors Boland and Everett

**ATTENDANCE AND STANDING**

Professor Simpson, Chairman

Professors Brown, Griffith, Heim, Lindemann, Martin Stewart and  
Associate Professor Belfort

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**CATALOGUE**

Dean Phillips, Chairman

Dean Carey, Professors Ballentine, Rhodes, Simpson, and the Registrar

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**CHAPEL**

Assistant Professor Rice, Chairman

Professors Stoltz, Rassweiler and Assistant Professor Schuyler

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**CURRICULUM AND COURSES**

Dean Phillips, Chairman

Dean Carey, Professors Ballentine, Bartol, Burpee, Davis  
and Herold

---

**HONORARY DEGREES**

Professor Hamblin, Chairman

Professor Martin and Dean Phillips

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**LIBRARY**

Professor Martin, Chairman

Professors Colestock, Rhodes and Stewart

---

**STUDENT ACTIVITIES**

Professor Drum, Chairman

Dean Carey, Professors Fries, Rhodes, Stewart and Stolz

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**OTHER OFFICERS**

NELSON FITHIAN DAVIS, Sc.D

Curator of the Museum

CLARENCE EDWIN GLASS, Ph.B.  
Director of Physical Education for Men  
Graduate Manager of Athletics

MARY STONER GRETZINGER  
Curator of the Library

WILLIAM EMMET MARTIN, A.M., L.H.D.  
Librarian

LEO LAWRENCE ROCKWELL, A.M.  
Editor of Alumni Monthly

CLARA GOBLE SALE  
Managing Dietitian

BROMLEY SMITH, A.M.  
Assistant Librarian

PAUL GEORGE STOLZ, A.M.  
Director of the School of Music

VIRGINIA WALTON, A.B.  
Director of Physical Education for Women

G. NORMAN WILKINSON, B.S.  
Taxidermist

# ADMISSION TO THE COLLEGE

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All applicants for admission should secure application blanks from the Registrar.

## Requirements

The requirement for admission is fifteen units of secondary school work. No student is admitted with less than thirteen units. A unit is a course of study pursued for a year, at least four periods a week of forty minutes each.

## Required Subjects

	Units
Algebra .....	1½
English .....	3
Geometry, Plane .....	1
Geometry, Solid ( For entrance to course in Biology, Chemical Engi- neering, Civil Engineering, Elec- trical Engineering and Mechan- ical Engineering) .....	½
Social Science, including History..	2
Natural Science .....	1

## Electives

French, at least .....	2 or
German, at least .....	2 or
Greek, at least .....	2 or
Latin, at least .....	2 or
Spanish, at least .....	2

The remaining four or four and one-half units may consist of further work in the above subjects or other subjects in the courses of study in a high school of the first class.



### Certificates

Applicants for admission who hold approved certificates which represent the required and elective subjects named above will be admitted without further examination.

### Examination

Applicants for admission who do not hold approved certificates are admitted by examination. This examination may be arranged for by writing to the President of the University.

### Advanced Standing

For advanced standing students must present evidence to the Committee on Attendance and Standing that they have covered in a satisfactory manner both the preparatory work for entrance to college and the subjects previously pursued by the classes they propose to enter. Students from other colleges must present also evidence of honorable dismissal. No student is admitted to the College as a candidate for a degree in the undergraduate courses after the beginning of the Senior Year.

### Special Requirement in English

Attention is called to the following regulation concerning English:

Students will be registered for the regular freshman rhetoric course only conditionally. Those found by a practical test in the writing of simple English to be notably deficient in spelling, punctuation, grammar and paragraphing will be assigned to a special sub-freshman course. For this work no college credit will be allowed. Students, however, who show satisfactory improvement will be transferred to the regular college sections, in October, December, and February.

# GRADUATION FROM THE COLLEGE

## Degrees

The college offers courses leading to the degrees of Bachelor of Arts and Bachelor of Science.

### Requirements for the Degree of Bachelor of Arts

#### I. Prescribed Work

Candidates for the degree of Bachelor of Arts must pursue the following courses:

	Credit Hours
English .....	9
English Literature .....	3
Foreign Language .....	6
History .....	6
Mathematics 1, 2, 6 .....	8
Philosophy .....	9
Physical Education .....	4
Public Speaking .....	4
Science .....	10
Fundamentals .....	1

By an hour is meant one recitation a week throughout a semester; two or three hours of laboratory work a week may be required for one hour credit. As a rule, a student may expect to spend three hours of time (including the class hour) for one hour of credit.

#### II. Majors and Minors

Subjects are arranged according to the following groups and divisions:

##### Group I

English

German

Greek and Latin

Romance Languages

## Group II

Bible

History and Political Science

Law, Economics, and Sociology.

Philosophy and Education

## Group III

Biology

Chemistry

Mathematics

Physics

All students who are candidates for the degree of Bachelor of Arts are required to complete a Major and two Minors. A Major consists of six semester courses or eighteen semester hours in one division of a group; a Minor consists of three semester courses or nine semester hours in one division of a group. Neither a prescribed course nor a course of the Freshman or the Sophomore Year shall be counted toward a Major or a Minor.

The Minors must be outside of the Group in which the Major is contained.

The choice of the Major and the Minors must be registered before or during the second semester of the Sophomore Year and with the advice and the approval of the Dean and of the Professor or Professors in charge.

## III. Credits

Each candidate for the degree of Bachelor of Arts is required to present at least one hundred and twenty-eight credit hours, not including physical education.

# IV. Conspectus of the Course of Study Leading to the A.B. Degree

## FRESHMAN YEAR

First Semester	Credit Hours	Second Semester	Credit Hours
Prescribed:		Prescribed:	
English Composition 1	3	English Composition 2	3
Fundamentals 1	1	Mathematics 2 and 6	4
Mathematics 1	4	Physical Education	3-1
Physical Education	3-1	Public Speaking 6 or 8	2
Public Speaking 1 or 3	2	Electives:	
Electives:		French	3
French	3	German	3
German	3	Greek	3
Greek	3	Latin	3
Latin	3	Mathematics 4	3
Science		Mathematics 10	2
Biology 25 or	5	Science	
Chemistry 1 or	5	Biology 26 or	5
Physics 1	3	Chemistry 2 or	5
Spanish	3	Physics 2	3
		Spanish	3

## SOPHOMORE YEAR

First Semester	Credit Hours	Second Semester	Credit Hours
Prescribed:		Prescribed:	
English Literature 1	3	English Composition 4	3
History 1	3	History 2	3
Electives:		Electives:	
Economics 1	3	French	3
French	3	German	3
German	3	Economics 10	3
Greek	3	Greek	3
Greek Civilization (Greek 9)	3	Latin	3
Latin	3	Logic	3
Mathematics 11	3	Mathematics 10	2
Public Speaking		Mathematics 12	3
Science		Roman Civilization (Latin 10)	3
Biology 1 or	5	Public Speaking	
Botany (Biology 25)	5	Science	
Chemistry or	5	Biology 2 or	5
Physics	3	Botany (Biology 26) or	5
Spanish	3	Chemistry or	5
		Physics	3
		Spanish	3

**JUNIOR YEAR****SENIOR YEAR**

	Credit Hours		Credit Hours
Philosophy 1, 6, 8	9	Major	9
Major	9	Minors	9
Minors	9	Electives	14
Electives	5		

**V. Regulations**

1. Sixteen credit hours are required in each semester. A student who has obtained an average of "A" in a semester may take more than sixteen hours in the following semester. No student may elect more than nineteen hours in a semester.

2. A total of four years' work (including preparatory work) in foreign language is required for graduation. Even if four years of foreign language are accepted for entrance a minimum of one year will be required in college. A student who begins a foreign language in college must pursue it for at least two years.

3. A student who elects two foreign languages in the Freshman Year will postpone Science to the Sophomore Year.

4. Ancient Civilization is prescribed for all students who do not pursue an ancient language.

5. The young women are required to take Physical Education in the Junior Year in addition to the work in the Freshman and Sophomore years.

**Requirements for the Degree of Bachelor of Science**

The degree of Bachelor of Science is conferred on a candidate who has completed the course in one of the following technical departments: Biology, Chemical Engineering,

Civil Engineering, Electrical Engineering, Mechanical Engineering and Home Economics. The designation of the degree is Bachelor of Science in Biology, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering or in Home Economics.

### Electives

In the choice of electives the regulations pertaining to the choice of electives for the degree of Bachelor of Arts apply, as far as may be necessary, to the choice of electives for the degree of Bachelor of Science.

## Conspectus of Courses Leading to the Degree of Bachelor of Science

Cl. stands for class-room hours.

L. stands for laboratory hours.

Cr. stands for credit hours.

## BIOLOGY

### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2, 4	5		5
Mathematics 1	4		4	Drawing 2		4	2
Drawing 1		4	2	Modern Language	3		3
Modern Language	3		3	Physical Education		3	1
Physical Education		3	1				

### SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 25	3	4	5	Biology 26	3	4	5
Chemical Engineering 1	3	4	5	Biology 14	3	4	5
English Literature 1	3		3	Biology 18	1		1
Biology 17	1		1	Biology 2	3	4	5
Biology 1	3	4	5	Chemistry 4	3	4	5



## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 7	3	4	5	Biology 8	3	4	5
Physics 1 and Physics 3 (a)	3	4	5	Physics 2 and Physics 4 (a)	3	4	5
Philosophy 1	4		4	Biology 24	2		2
Electives:				Electives:			
Modern Language	3		3	Biology 6	1	4	3
Chemistry 3	3	4	5	Philosophy 8	3		3
Biology 3		4	2	Biology 28	3	4	5
Biology 31	3		3	Literature	3		3
Biology 15	3	4	5	Modern Language	3		3
Biology 9	1	4	3	Biology 4		4	2
				Biology 10	1	4	3

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 19	3	4	5	Biology 32	3		3
Biology 29	3	4	5	Electives:			
Electives:				Biology 12	1	4	3
Biology 27	3		3	Biology 22	3	4	5
Biology 9	1	4	3	Biology 30	3	4	5
Other electives from the Junior and Senior Electives of the A. B. Course				Other electives from the Junior and Senior Electives of the A. B. Course			

## CHEMICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	German (or French)	3		3
German (or French)	3		3	Mathematics 2, 4	5		5
Mathematics 1	4		4	Public Speaking		2	2
Public Speaking		2	2	Physical Education		3	1
Physical Education		3	1				

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemical Engineering 1	3	4	5	Chemical Engineering 2	3	4	5
Chemistry 5	2	2	3	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineering 13		4	2
Mechanical Engineering 10		4	2	Physics 4 and Physics 4 (a)	3	4	5
Physics 3 and Physics 3 (a)	3	4	5				

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemical Engineering 9	1		1	Chemical Engineering 10	1		1
Chemistry 3	3	4	5	Chemistry 4	3	4	5
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Physics 5	2	6	5	Physics 6	2	6	5
Electives:				Electives:			
Drawing 5	1	2	2	Drawing 6	1	2	2
Economics	3		3	Economics	3		3
Electrical Engineer- ing 1	3	4	5	Electrical Engineer- ing 2	3	4	5
Electrical Engineer- ing 3	3		3	Mathematics 26	3		3
				Mechanical Engineer- ing 2	4	2	5

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemical Engineering 3	2	2	3	Chemical Engineering 4	2		2
Chemical Engineering 5		8	3	Chemical Engineering 6		8	3
Chemical Engineering 7	3	4	5	Chemical Engineering 8	3	4	5
Economics 7	2		2	Civil Engineering 6	1		1
Electives:				Electives:			
Biology 29	3	4	5	Biology 30	3	4	5
Economics	3		3	Economics	3		3
				English Composition	3		3
				Mechanical Engineer- ing 6		3	1

## CIVIL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2, 4	5		5
Mathematics 1	4		4	Mechanical Engineer- ing 10		4	2
Modern Language	3		3	Modern Language	3		3
Physical Education		3	1	Physical Education		3	1

## SOPHOMORE YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 5	2 2 3	Drawing 4	2 1
Drawing 3	2 1	Mathematics 8	1 1
Mathematics 7	1 1	Mathematics 12	3 3
Mathematics 11	3 3	Modern Language	3 3
Mechanical Engineer- ing 10	4 2	Surveying 2	2 2
Modern Language	3 3	Surveying 4	10 5
Surveying 1	10 5	Elective	3 3

## JUNIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Civil Engineering 1	1 1	Civil Engineering 10	2 2
Civil Engineering 9	1 1	Civil Engineering 12	2 2
Civil Engineering 11	1 1	Civil Engineering 14	1 1
Civil Engineering 13	2 2	Civil Engineering 16	3 3
Electrical Engineering 3	3 3	Mathematics 24	3 3
Physics 3 and Physics 3 (a)	3 4 5	Mechanical Engineer- ing 2	3 2 4
Surveying 5	6 3	Physics 4 and Physics 4 (a)	3 4 5

## SENIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Civil Engineering 3	5 5	Biology 28	3 4 5
Civil Engineering 7	3 3	Civil Engineering 4	5 5
Electrical Engineering 1	3 4 5	Civil Engineering 6	1 1
Physics 5	2 6 5	Electrical Engineering 2	3 4 5
		English Composition 6	3 3

## ELECTRICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 1	3 4 5	Chemistry 2	3 4 5
Drawing 1	4 2	Drawing 2	4 2
English Composition 1	3 3	English Composition 2	3 3
Fundamentals 1	1 1	Mathematics 2, 4	5 5
Mathematics 1	4 4	Mechanical Engineer- ing 10	4 2
Modern Language	3 3	Modern Language	3 3
Physical Education	3 1	Physical Education	3 1

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 5	2	2	3	Drawing 4		2	1
Drawing 3		2	1	Economics 6 or 8			
Mathematics 7	1		1	Mathematics 8	1		1
Mathematics 11	3		3	Mathematics 12	3		3
Mechanical Engineering 13		4	2	Mechanical Engineering 14		4	2
Modern Language	3		3	Modern Language	3		3
Physics 3 and Physics 3 (a)	3	4	5	Physics 4 and Physics 4 (a)	3	4	5

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineering 1	3	4	5	Electrical Engineering 2	3	4	5
Electrical Engineering 3	3		3	Mechanical Engineer- ing 2	3	2	4
Physics 5	2	6	5	Physics 6	2	6	5
Elective : Economics				Elective : Economics			

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	3		3	Civil Engineering 6	1		1
Civil Engineering 7	3		3	Civil Engineering 16	3		3
Electrical Engineering 5	3		3	Electrical Engineering 6	3		3
Electrical Engineering 7	3		3	Electrical Engineering 10	3		3
Electrical Engineering 9	3	2	4	Electrical Engineering 12	3		3
Electives:				Electives:			
Economics 5				English Composition			
Economics 7				Mathematics 26	3		3
English Composition 9				Surveying 6	6		3

## MECHANICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2, 4	5		5
Mathematics 1	4		4	Mechanical Engineering 10	4		2
Modern Language	3		3	Modern Language	3		3
Physical Education		3	1	Physical Education		3	1

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 5	2	2	3	Drawing 4		2	1
Drawing 3		2	1	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineering 14	4	4	2
Mechanical Engineering 13		4	2	Modern Language	3		3
Modern Language	3		3	Physics 4 and Physics			
Physics 3 and Physics				4 (a)	3	4	5
3 (a)	3	4	5	Elective			3

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineering 1	3	4	5	Electrical Engineering 2	3	4	5
Mechanical Engineer-				Mechanical Engineer-			
ing 7		4	2	ing 2	3	2	4
Mechanical Engineer-				Physics 6	2	6	5
ing 11	2		2	Elective			2
Physics 5	2	6	5				

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	3		3	Civil Engineering 6	1		1
Civil Engineering 7	3		3	Electrical Engineering 6	3		3
Electrical Engineering 5	3		3	Electrical Engineering 10	3		3
Mechanical Engineer-				Mechanical Engineer-			
ing 3	2	4	4	ing 6	2	4	4
Mechanical Engineer-				Mechanical Engineer-			
ing 5	2	2	3	ing 8	2	4	4
Mechanical Engineer-				Electives:			
ing 9		4	2	Mathematics 26	3		3
				Surveying 6		6	3

## HOME ECONOMICS

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1b	3	4	5	Chemistry 2b	3	4	5
English Composition 1	3		3	English Composition 2	3		3
French	3		3	French	3		3
Fundamentals 1			1	Mathematics 2 and 6	4		4
Mathematics 1	4		4	Physical Education		2	1
Physical Education		2	1	Public Speaking		2	2
Public Speaking		2	2				

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 13	3	4	5	Biology 14	3	4	5
Chemistry 7	2	2	3	Chemistry 8	2	2	2
English Literature 1	3		3	French	3		3
French	3		3	Home Economics 2	1		1
Home Economics 1	1		1	Home Economics 12	1	4	3
Home Economics 7	3		3	Elective from A. B. Course			
Physical Education		2	1				

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
History 1	3		3	History 2	3		3
Home Economics 9	2	2	3	Home Economics 4	1	4	3
Home Economics 13	3		3	Home Economics 10	2	2	3
Home Economics 21	3		3	Home Economics 14	3	2	4
Physical Education		2	1	Home Economics 22	3		3
Elective from A. B. Course				Physical Education		2	1
No student may take less than sixteen hours, nor more than nineteen hours.							

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 21	3	4	5	Home Economics 20 or	4		4
Home Economics 5 or	1	4	3	Home Economics 16 or	1	2	2
Home Economics 15	3	2	4	Home Economics 18			3
Electives from the Junior and Senior A. B. Course.				Electives from the Junior and Senior A. B. Course.			
No student may take less than sixteen hours, nor more than nineteen hours.				No student may take less than sixteen hours, nor more than nineteen hours.			

## CONDITIONS FOR ADVANCED DEGREES

The degrees of Master of Arts and Master of Science will be conferred upon Bachelors of Arts or of Science who shall have satisfied the following requirements:

1. One year of resident work. Graduates of Bucknell University may do the work in absentia, but will not be given the degree in less than three years after graduation. Graduates of Bucknell University, who at the end of their Senior year, have completed one-half of the work required for the Master's degree, may be admitted to the Master's degree one year after receiving the Bachelor's degree.



2. The completion, with a grade not lower than B, of thirty hours' work of an advanced nature, of which a major of eighteen hours must be in one department. All courses must have the approval of the head of the Department in which the major is chosen, and of the Committee on Advanced Degrees. No credit will be given for work done in other institutions which has been counted for a degree.

The special field in which the work is done will be designated in the Master of Science diplomas when recommended by the Professor.

The degrees of Civil Engineer, Electrical Engineer, Mechanical Engineer and Chemical Engineer will be conferred only upon persons who have proved their ability to plan and direct professional work or original work in applied science. The candidate must have received a Bachelor's degree from Bucknell University at least five years before registration for the advanced degree, and must have practiced his profession successfully for a similar period, during at least one year of which he must have had responsible charge of work as principal or assistant. When a candidate registers, he must present a detailed account of his professional experience, which must be approved by the Committee on Advanced Degrees in consultation with the Professor in charge of the Department in which he registers. Candidates must also present a satisfactory thesis or an approved equivalent of the same, which shall give evidence of their fitness to receive the degree sought. This thesis may not be a mere description of engineering work of a usual character, nor a digest of existing literature, but shall describe or contain some distinct contribution to the engineering profession.

Membership of an approved grade in the principal engineering or technical societies may be considered sufficient evidence of a candidate's fitness to receive an engineering degree.

# COURSES OF INSTRUCTION

The term hour or hours, unless otherwise specified, signifies credit. The odd numbers indicate first semester courses.

## ART

1. **Art History.** Medieval and Modern. Juniors and Seniors. First semester. One hour. Professor Martin.

## BIBLE

1. **Hebrew History and Literature.** Juniors and Seniors. First semester. Three hours. Professor Phillips.

2. **New Testament History and Literature.** Juniors and Seniors. Second semester. Three hours. Professor Phillips.

4. **The Gospels.** Juniors and Seniors. Second semester. Three hours. Professor Phillips.

New Testament Greek. (Greek 7-8). Professor Hamblin.

## BIOLOGY

Professors Davis and Stewart, and Assistant Professor Rice

It is the constant aim to teach how to interpret Nature.

The Biological Course of study has been arranged with two ideas in mind: First, to prepare students to teach Zoology, Botany, Physics, and Chemistry in Preparatory Schools, or to enter graduate schools for advanced work in Biology; Second, to prepare students for the study of Medicine. The student may select from the Medical Preparatory subjects offered such as will be required for admission to the Medical College in which he may wish to take his course in Medicine. These Medical Preparatory studies include English, Modern Language, Mathematics, Chemistry, Physics, and Biology. Most of these subjects are included in the first two years of the Biological Course. Students wishing to prepare for the study of Medicine should con-

sult with the Professors in Biology in regard to the selection of their subjects.

**1. Zoology.** Lectures, text-books, and laboratory work. The fundamental principles of Biology are presented and illustrated by direct and comparative study of the lower forms of life, beginning with the Protozoa. Attention is paid to the structure, development, relationships, behavior, and economic value of a wide series of organisms. Sophomores. First semester. Five hours.

**2. Zoology.** The second semester continues the comparative study of animals by dissection of the higher forms, including mammals. Sophomores. Second semester. Five hours.

Prerequisite: Course 1.

**3. Ornithology.** A study of living birds in the field. The student learns the terms used in describing birds by the use of text-books, bird skins and mounted specimens. The course includes: "Finding and Naming Birds", "The Distribution of Birds", "Migration of Birds", "The Voice of Birds", "The Nesting of Birds", "The Plumage of Birds", "The Food of Birds", and "The General Activities of Birds". The student is taught how to make bird skins. Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2.

**4. Ornithology.** The course continues the work of the first semester. Juniors. Second semester. Two hours.

**6. Entomology.** Recitations and laboratory work. In this course each student makes a thorough study of the dissection, life history, and habits of insects representative of the different orders. Special attention is given to the economical importance and relation of insects to agriculture. Juniors. Second semester. Two hours.

Prerequisite: Course 1.

**7. Microscopic Anatomy.** Lectures, text-books, and laboratory work. The first semester's work covers the embryology of representative forms as the chick and pig. The methods employed in the laboratory give the student much practice in fixing, dehydrating, embedding, and sectioning tissues. Juniors. First semester. Five hours.

Prerequisite: One year of Zoology and Descriptive Chemistry.

**8. Microscopic Anatomy.** The second semester covers the histology of the human body and is illustrated by the preparation of a large series of microscopic slides by each student. Juniors. Second semester. Five hours.

Prerequisite: Course 7.

**9. Osteology.** Lectures covering the development of the skeletal system. Laboratory work on the human skeleton articulated and disarticulated; the gross structure of bones; the preparation and comparative study of skeletons of other vertebrates. Seniors. First semester. Three hours.

Prerequisite: One year of Zoology.

**10. Human Anatomy.** Dissection and quizzes on the parts dissected. Each student is assigned to the dissection of one quarter of the human cadaver. This course is designed to instruct the student in the general method of dissection in the relation of the structures in the body, and to present a general idea of regional anatomy. Models and text-books are used as guides. Juniors. Second semester. Three hours.

Prerequisite: One year of Zoology.

**12. Human Anatomy.** A course similar to the preceding. The student is assigned to the part of the cadaver which he has not previously dissected. This course in Human Anatomy, following the preceding one, affords the student an opportunity to make a dissection of the entire human body. Seniors. Second semester. Three hours.

Prerequisite: Course 10.

**14. Human Physiology.** The aim of this course is to acquaint the student with the general principles of Physiology, including a brief survey of the structure of the human body, motion, the central nervous system, organs of special sense, respiration, circulation, digestion, secretion, and excretion.

The work consists of lectures, demonstrations, and a personal study by the student of a designated text-book in Physiology. Each student spends four hours a week in the laboratory performing practical experiments in Physiology. Sophomores. Second semester. Five hours.

**15. Human Physiology, Advanced.** A more detailed study of the action of motor and nerve tissue is made in this course than in the preceding one. Likewise more advanced work is presented on blood and circulation, external and internal respiration, regulation of body heat, chemical coordination, digestion and absorption.

The course consists of lectures and demonstrations. Each student spends four hours a week in the laboratory and has the use of all essential apparatus needed to experiment with freshly prepared material. Considerable time is spent on the physiological chemistry of

blood, milk, foods and urine. Juniors. First semester. Five hours.

Prerequisite: One year of college Zoology, Chemistry, Physics, and Course 14.

**13. Biology, Domestic Science.** This course is designed to present the fundamental properties of living matter. The structure, form, and life habits of one-celled and multi-cellular plants and animals are studied. The inter-relation of the animal and plant kingdoms is presented. Simple problems in evolution and heredity are discussed.

The work consists of lectures, quizzes, and a personal study by the student of a designated text in Biology. Four hours a week are devoted to laboratory exercises on living and preserved material. Each student has the use of a compound microscope, and is instructed in its care and use. Sophomores. First semester. Five hours.

**17 and 18. Scientific German or French.** The reading of foreign Biological Literature. Sophomores. First and second semesters. Two hours.

Prerequisite: Freshman German or French.

**19. Bacteriology.** By the method of recitations, lectures, and laboratory work, the student is given the fundamentals in micro-biology. The laboratory work includes the making of culture media, methods of sterilization, isolation of bacteria in pure cultures, staining of films, the examination of bacteria, and the measuring of micro-organisms under the microscope; a study of bacteria in milk, drinking water, and sewage. Seniors. First semester. Five hours.

Prerequisite: Zoology or Biology, and the first course in Chemistry.

**21. Bacteriology, Domestic Science.** This course is similar to the preceding one. Stress is placed upon the relation of bacteria, yeasts, and molds to the preparation and preservation of foods. The bacteriological problems of personal and public hygiene and sanitation are included. Seniors. First semester. Five hours.

Prerequisites: Zoology or Biology, and the first course in Chemistry.

**22. Bacteriology, Advanced.** This course is designed to be a continuation of either of the preceding courses in Bacteriology. The characteristics of the various groups of pathogenic bacteria are presented in lectures and readings from standard text-books on Bacteriology and monographs. The laboratory work includes the cultural characteristics of the various pathogenic groups, quantitative and qualitative bacteriological analysis of milk and water, culturing of naso-pharyngeal swabs, and some of the more simple serological re-



actions, such as agglutination, precipitation, etc. Seniors. Second semester. Five hours.

Prerequisite: Courses 19 and 24.

**24. Sanitary Science.** A lecture course setting forth the relation of proper sanitation to disease, the history of epidemics, the nature and value of vaccination, and other factors controlling infection and resistance. Juniors. Second semester. Two hours.

**25. Botany.** Recitations, lectures and field work. This is a general course including the anatomy of the representative types and their relation to the environment; a study is made of the local flora. The laboratory work and lectures develop the subject from the evolutionary standpoint. Sophomores. First semester. Five hours.

**26. Botany.** This course continues the work of the first semester. Field work to show the winter conditions of trees and shrubs. Systematic Botany. Use of manuals such as Gray's and Britton's and Brown's. Sophomores. Second semester. Five hours.

Prerequisite: Course 25.

**27. Genetics.** The lectures and reports deal with the facts and problems of variation and heredity, especially their application to mankind. Text-books by such authors as Walter, Castle, and Conklin. Seniors. First semester. Three hours.

**28. Forestry.** This course covers the factors that control and regulate the development of forests. In the laboratory and the field work the students are taught to identify the trees.

**29. Geology and Mineralogy.** Recitations, lectures, and laboratory work. A general course intended to give the leading facts and principles of Geology and the more important events in the geological history of the earth. The development of the North American continent is studied in detail. The laboratory work includes determinative Mineralogy. Seniors. First semester. Five hours.

**30. Economic Geology.** Recitations, lectures and laboratory work. An economic study of the rocks and minerals of economic importance including metals and non-metals. Seniors. Second semester. Five hours.

Prerequisite: Chemistry and Geology.

**31. Physiological Psychology.** Recitations, lectures and laboratory work. The aim is to study the development of the physiological bases of the mind. Juniors. First semester. Three hours.

**32. Comparative Psychology.** Recitations, lectures and reports. The germinal bases of the mind. In the development of the mind comparisons are made between human development and that of other



animals. The oneness of life in respect to its fundamental processes is studied by such comparisons. Seniors. Second semester. Three hours.

## CHEMISTRY

The courses in this department are designed to meet the ever widening demand for chemical knowledge made by the courses in Engineering, Medicine, Home Economics and the Arts. They are intended to give the student a wide foundation in this basic science, to develop skill in laboratory technique, careful observation, correct judgment and accurate expression. The principles and theories of chemistry are developed by studying carefully selected types of reactions. The courses prepare for teaching chemistry or for entering industrial laboratories or for Chemical Engineering.

### GENERAL CHEMISTRY

Professor Owens and Assistant Professor Schuyler and Mrs. Brown

**1a and 2a. Descriptive Chemistry and Qualitative Analysis.** This is a fundamental course, required of all Engineers, Biological and Medical students, and is open to all others who wish to take it for its informational or cultural value. It continues throughout the year, taking up the non-metals first and following with the metals and qualitative analysis. In the latter about forty unknowns are determined. The work is conducted by text-book, lecture, and laboratory. Freshmen. First and second semesters. Ten hours.

**1b and 2b.** Courses 1a and 2a adjusted to the needs of students in Home Economics.

**3 and 4. Organic Chemistry.** The saturated hydrocarbons and their derivatives are studied with special regard to their constitution. Later the unsaturated hydrocarbons of the olefine and acetylene series are studied. Carbohydrates are taken up. The preparation and properties of typical compounds are discussed, attention being directed to those changes which come under the head of general reactions, rather than isolated facts regarding particular substances. Pure organic compounds are prepared in the laboratory and their reactions investigated. Ultimate organic analysis begun; Carius' determinations for the halogens and sulphur. Written reports with criti-

cal discussions of the reactions, methods, etc., are required for all laboratory work.

In the second semester the dibasic acids and their derivatives are studied. Stereo chemistry. Ureides and proteins. Later the aromatic hydrocarbons and their derivatives, polycyclic and heterocyclic compounds, terpins and camphors are studied. Particular attention is given to questions of constitution, one of the objects being to train the students to think out such matters, and to attempt to deduce a constitutional formula for a given substance, by comparing its properties with those of others of known composition. In the laboratory ultimate organic analysis is continued with determinations of carbon, nitrogen and hydrogen. Pure organic compounds are prepared and their reactions investigated, as before. Written reports as in the first semester. Juniors. First and second semesters. Ten hours.

Prerequisites: Chemistry 1-2 and Chemical Engineering 1.

**5. Metallurgy.** The sources, manufacture, properties and uses of the different metals, with the influence which various impurities exert, are studied. Special attention is given to iron and steel, also the various special alloys which are being placed upon the market. Text, lecture, and laboratory. Sophomores and Juniors. First semester. Three hours.

Prerequisites: Chemistry 1, 2.

**6. Agricultural Chemistry.** By text-book, lectures and laboratory the chemistry of plants and animals is studied. Soils, fertilizers and feeds are analyzed. The principles on which successful agriculture depends are studied. This course covers the legal requirements for teachers of Pennsylvania high schools. Juniors. Second semester. Three hours.

Prerequisites: Chemistry 1, 2.

**7 and 8. Food Chemistry.** Consists of a course designed to acquaint the student with the chemical compounds which are found in foods, the changes which take place in digestion and assimilation and the tests by which they are identified. Sophomores. First and second semesters. Six hours.

Prerequisites: Chemistry 1b, 2b.

**Quantitative Analysis,** see Chemical Engineering.

**Industrial Chemistry,** see Chemical Engineering.

**Inorganic Preparations,** see Chemical Engineering.

**Special Courses.** Special courses in chemical subjects have been given under certain conditions. The offering of a special course is at the option of the professor in whose department such work would fall and is usually dependent upon the available time of the professor and the type of the individual student. Such courses have been given in Advanced Organic Preparations, Advanced Quantitative Analysis, Mineral Analysis, Industrial Analysis, Micro-chemical Analysis (including work with the polarimeter-microscope), and similar courses. These courses have been primarily advanced laboratory courses.

## CHEMICAL ENGINEERING

Professor Brown and Assistant Professor Schuyler

**1 and 2. Quantitative Analysis.** Lecture, recitation and laboratory work. This course aims to teach the student the fundamentals of analytical procedure and manipulation. Gravimetric and volumetric determinations are first made with pure chemicals. This is followed by the analysis of limestone, ores, alloys, oils, gas, water, etc. The latter part of the second semester is given to special methods in technical analysis and the determination of traces of impurities in the so-called "chemically pure" reagents. Sophomores. First and second semesters. Ten hours.

Prerequisites: Chemistry 1, 2.

**3 and 4. Industrial Chemistry.** A series of lectures and recitations upon the most important technical chemical operations exclusive of metallurgy. It is essentially a study of the application of chemical principles to technical processes and the mechanical methods of applying these processes, supplemented, so far as possible, by visits to plants in operation. The course includes a study of such industries as the manufacture of sulphuric acid, alkalies, glass, cement, rubber, paper, dyestuffs, etc. Seniors. First and second semesters. Four hours.

Prerequisites: Chemistry 1, 2, 3, 4, 5.

**5 and 6. Chemical Preparations.** Primarily a laboratory course, the experiments duplicating, so far as possible, the operations used in industrial works. Underlying principles and percentage yield are required in the written report of each experiment. About thirty-five preparations are required. Inorganic substances are first prepared and purified. Approximately one-third of the work consists of

the electrolytic preparation of inorganic and organic compounds. Seniors. First and second semesters. Six hours.

Prerequisites: Chemistry 1, 2, 3, 4, 5, 6, and Chemical Engineering 9, 10.

Physics 2, 3.

**7 and 8. Physical Chemistry.** Class and laboratory work. Class work consists of lectures, recitations and problems. This course is fundamental in character and is intended to develop the idea of physical chemistry as applied to actual problems in industrial operations. A study is made of the kinetic theory of gases, gas laws, vapor pressure, equilibria, phase rule, theories of solution, osmotic pressure, etc. The latter part of the year is given to the study of electro chemistry and chemical statics and dynamics. Laboratory work is one experiment per week. Written reports and discussions required for each experiment. The laboratory work includes the determination of density of gases, viscosity, optical activity, refraction, partition coefficients, molecular weights by various methods, reaction velocity, transport numbers, electromotive force, conductivity, etc. Students use the calorimeter, colorimeter, refractometer, polarimeter, tintometer, viscosimeter, etc., and are made to recognize their application to industrial problems. Seniors. First and second semesters. Ten hours.

Prerequisites: Chemistry 1, 2, 3, 4, and Chemical Engineering 1, 2, 9, 10.

Mathematics: Through Integral Calculus.

Physics: All Engineering Physics to the end of the Junior year.

**9 and 10. German Chemistry.** A course in which a study is made of selections from standard German periodicals. The work in this course is usually a study of the Chemiker Kalender for the current year. Juniors. First and second semesters. One hour.

Prerequisites: Chemistry 1, 2, and Chemical Engineering 1, 2.

German: One year.

**Special Chemical Courses.** See Department of Chemistry.

## CIVIL ENGINEERING

Professor Lindemann

**1. Architectural Design.** A course in which are considered the elementary principles of building construction. Juniors. First semester. One hour.

**3 and 4. Bridges and Buildings.** The work of this course includes the solution of problems in graphic statics; the determination of stresses and deformations in framed structures by graphic and algebraic methods; the calculation and design of roof and bridge trusses, also the detailing and drafting of the same. Seniors. First and second semesters. Ten hours.

**6. Contracts.** A course in which are considered the principles of Common Law as applied to contracts. Seniors. Second semester. One hour.

**7. Hydraulics.** The work of this course includes the theory of Hydrostatics and Hydraulics; the flow of water over weirs, through orifices and tubes, and in pipes, canals and rivers; the measurement of water-power; the theory of water-wheels and turbines. Seniors. First semester. Three hours.

**9 and 10. Masonry and Foundations.** The work of this course includes a consideration of the materials of masonry construction, their preparation and use; a study of foundations—ordinary, pile and under-water; the investigation and design of masonry dams, retaining walls, abutments, piers, chimneys, culverts and arches. Juniors. First semester. One hour. Second semester. Two hours.

**11 and 12. Roads and Pavements.** The work of this course includes a study of the economic location, design, and construction of roads and pavements; a comparison of the materials and methods of construction; the design of some road or pavement, including the preparation of drawings, specifications and estimates for the same. Juniors. First semester. One hour. Second semester. Two hours.

**13 and 14. Strength of Materials.** The work of this course includes a study of simple and combined stresses, and the resulting deformations; a consideration of the methods employed in testing the materials of construction; the solution of numerous problems in the design and investigation of beams, columns, shafts, pipes and footings. Reinforced concrete receives special attention. Juniors. First semester. Two hours. Second semester. One hour.

**16. Water Supply and Sanitary Engineering.** The work of this course includes the consideration of collection and storage of water, quantity of water required, rainfall, flow of streams, evaporation, supplying capacity of water-sheds, springs and wells; a study of the various methods of sewage disposal; the design of a water supply system and of a sewage disposal plant. Juniors. Second semester. Three hours.

**Surveying,** see Surveying.



# ECONOMICS AND POLITICAL SCIENCE

Professor Heim

## ECONOMICS

**1. Economics I.** A general course covering the principles of the subject, with emphasis on Production and Distribution. Sophomores. First semester. Three hours.

**3 and 4. Economics II.** Current Economic Problems. Application of principles to a detailed study of current economic questions. For the year 1920-21, the following subjects will be studied:

**a. Railroad Transportation.** Juniors and Seniors. First semester. Two hours.

**b. Organization of Industry and Markets.** Juniors and Seniors. Second semester. Two hours.

**5. Money and Banking.** Juniors and Seniors. First semester. Three hours.

**6. Corporation Finance.** A study of the financial operations of corporations, the form and character of investment securities, and principles of capitalization. Juniors and Seniors. Second semester. Three hours.

**7. Commercial Law.** Juniors and Seniors. First semester. Two hours.

**8. Principles of Accounting.** Juniors and Seniors. Second semester. Two hours.

## POLITICAL SCIENCE

**10. Government of U. S.** A study of constitutional law as developed and applied to the problems of government in the United States. Sophomores. Second semester. Three hours.

**11. Comparative Politics.** A comparative study of European Governments. Juniors and Seniors. First semester. Three hours.

**12. International Law.** Juniors and Seniors. Second semester. Three hours.

**14. Public Administration.** A study of the principles of public administrative law and organization. Juniors and Seniors. Second semester. Two hours.

**15. Political Parties.** Organization and functions of political parties, with special reference to the United States. Juniors and Seniors. First semester. Two hours.



## EDUCATION

Professor Phillips

1. **History of Education.** Juniors and Seniors. First semester. Three hours.

2. **Psychology of Education.** Juniors and Seniors. Second semester. Three hours.

4. **Philosophy of Education.** Juniors and Seniors. Second semester. Three hours.

5. **Educational Theories.** Seniors. First semester. Two hours.

6. **Secondary Education.** Seniors. Second semester. Three hours.

7. **Religious Education.** Juniors and Seniors. First semester. Two hours.

**Comparative Psychology.** (Biology 32). Professor Davis.

**Child Study.** (Home Economics 22). Professor Carey.

**Teachers' Course in English.** (English Literature 16). Professor Fries.

**Teachers' Course in Mathematics.** (Mathematics 22) Assistant Professor Everett.

## ELECTRICAL ENGINEERING

Professor Rhodes and Mr. Irland

1. **Direct Current Machinery.** This course begins with a brief review of electromagnetism, followed by a careful study of the electric circuit involving the principles of the simpler alternating current circuits. Numerous problems are given to clearly illustrate the laws of these circuits. Attention is given to the various types of electrical measuring instruments, and their calibration, measurements of inductance, capacity and resistance. Then follows a careful study of the principles of dynamo electric machines as to their structural details, performance characteristics, and problems in operation. The work of the course is accomplished through lectures, recitations, laboratory experiments and writing of reports. Juniors. First semester. Five hours.

This course must be preceded or accompanied by the course in Electrical Measurements.

**2. Alternating Current Machinery.** The study of applied circuits is enlarged upon in this course and extended to include generators, transformers, induction motors, synchronous motors, synchronous converters, and motor generators. The same plan is followed as that in the development of the preceding course, and the laboratory work is primarily designed to illustrate the theory of the course, but wherever practicable, commercial tests in operation are performed. Juniors. Second semester. Five hours.

This course must be preceded by the course in Direct Current Machinery.

**3. Theoretical Mechanics.** A rapid review of the type forms of differential equations most frequently met in this work is taken up first. Then follows the study of forces, couples, moment of inertia, and flexible cords, together with the geometry of motion, dynamics of machinery, work, energy, and impact. Juniors. First semester. Three hours.

This course must be preceded by one year of calculus.

**5 and 6. Electrical Design.** Numerous problems on the magnetic circuit are taken up and followed with the design and working drawing of an electromagnet. Then follows the discussion of the principles of design as applied to continuous and alternating apparatus. Each student is required to make complete computations for a continuous current generator or motor, alternator, induction motor, and two transformers. All electrical and magnetic dimensions are computed and scale drawings of the important parts are made. Seniors. First and second semesters. Three hours each semester.

Must be preceded by D. C. Machinery and A. C. Machinery.

**7. Generating Stations.** Comparative performance of the important prime movers and the economic management of generating plants and substation equipment are studied in detail and practical estimates made. Attention is also given to the application of storage batteries to the problems of distribution. The care of storage batteries, arrangement of switch gear, instruments, transformers, and lightning arresters are taken up in their relation to the generating station. Seniors. First semester. Three hours.

Must be preceded by Alternating Current Machinery, and Boilers and Engines.

**9. Telegraphy and Telephony.** Attention is given in detail to the various systems of electric telephony and telegraphy in practical use, with reference to their principles and modes of application. The in-

stallation, maintenance and testing of telephone and telegraph lines are considered as well as the difficulties of their operation. Efficiency tests are made and graphs plotted. Seniors. First semester. Four hours.

Electrical Measurements, D. C. Machinery, and A. C. Machinery are prerequisites for this course.

**10. Electric Transmission, Line Construction, Wiring, and Economics.** The various systems and arrangements for power distribution, wiring for lighting, and substation feeder systems, are investigated. Practical problems in the economics of transmission and distribution including line construction are computed, and complete typical systems are worked out in detail. Seniors. Second semester. Three hours.

Must be preceded by course in Alternating Current Machinery.

**12. Electric Railways, Construction, Operation, and Economics.** This course deals with the principles and design of the different types of railway construction. Analysis of train performance, types of control, systems of braking, and methods of motor suspension are studied in detail. Estimates of complete equipment for a short line are made and prospective revenue from operation considered. The economics of the operation and maintenance of American railways is considered in the conclusion of the course. Seniors. Second semester. Three hours.

Alternating Current Machinery is a prerequisite for this course.

## DRAWING

**1 and 2. Freshman Drawing.** The work covers the use of instruments: geometrical problems: form and proportion of standard letters: methods of spacing and laying out of titles: orthographic and isometric drawings: sectioning, shading, and developments. First and second semesters. Four hours.

This course is required of all candidates for the B.S. degree except those in Home Economics.

**3 and 4. Sophomore Drawing.** The work of the first year is continued by the use of special problems for each branch of engineering. The Electrical Engineering and Mechanical Engineering students will make detailed drawings of bolts, nuts, and machine parts and also assembly drawings of complete machines. The Civil Engineering students will make detailed drawings of such structures as sewers, tunnels, bridges, and will enlarge and reduce maps. First and second semesters. Two hours.

Required in Civil Engineering, Electrical Engineering and Mechanical Engineering courses.

**5 and 6. Junior Drawing.** This course is required in the Electrical Engineering and Mechanical Engineering courses and covers the mathematical design of gears, cams, and screws, and the computations of type forms of cutting and grinding tools. First and second semesters. Four hours.

## ENGLISH

Professors Fries, Herold, Rassweiler, Rockwell and Mr. Greenland

### A. ENGLISH LITERATURE

Professors Herold, Fries and Rockwell

Undergraduates who major in English are advised to take either Chaucer or Anglo-Saxon. One course is prescribed for graduate students whose major for the degree of Master of Arts is in English.

Courses with starred numbers are given regularly, but will be omitted in 1921-1922.

**1. English Literature.** Survey course for Sophomores. Three or four sections. First semester. Three hours.

**3. Victorian Literature—1830-1890.** Carlyle, Tennyson and Ruskin. Juniors and Seniors. First semester. Three hours.

**4. Victorian Literature Continued.** Arnold, the Brownings, and Swinburne. Juniors and Seniors. Second semester. Three hours.

**\*5. Eighteenth Century—1700-1790.** Pope, Addison, Dr. Johnson, Gray and Burns. Juniors and Seniors. First semester. Three hours.

**\*6. Revolt and Romanticism—1790-1830.** Wordsworth, Coleridge, Scott, Byron, Shelley and Keats. Juniors and Seniors. Second semester. Three hours.

**\*7. Pre-Shakespearean Drama.** Juniors and Seniors. First semester. Three hours.

**8. Shakespeare.** Juniors, Seniors, and Sophomores, by permission. Second semester. Three hours.

**\*9. Dante and Milton.** A study of the great epics: Dante's "Divine Comedy" in translation, and Milton's "Paradise Lost". Juniors and Seniors. First semester.

**\*10. American Literature to 1870.** Juniors and Seniors, and Sophomores, by permission. Second semester. Three hours.

**11. Modern Drama.** A study of the new dramatic literature; its varieties, technique, aims, and problems. Juniors and Seniors. First semester. Three hours.

**12. Teachers' English.** Second semester. Three hours.

**\*13. Anglo-Saxon.** Juniors and Seniors. First semester. Three hours. Alternating with 15.

**15. Chaucer.** Juniors and Seniors. First semester. Three hours.

**16. Recent Literature, English and American.** Juniors and Seniors. Second semester. Three hours.

## B. RHETORIC AND COMPOSITION

Professors Fries, Rockwell, Herold and Mr. Greenland

**1. Freshman Rhetoric.** First semester. Three hours. Required of all students in the first year.

**2. Continuation of Course 1.** Second semester. Three hours. Required.

**4. Rhetoric and Composition.** Second semester. Three hours. Required of all candidates for the degree of A.B. who have completed Courses 1 and 2.

**6. Rhetoric and Composition.** Second semester. Three hours.

An advanced course for students in the Engineering and Science Courses.

**8. Journalism.** Juniors and Seniors. Second semester. Three hours.

**9. Argumentation, Theory and Practice.** An advanced course. Juniors and Seniors. First semester. Three hours.

**10. Advanced Composition.** A discussion and practice of the Essay, the Short-Story, and the Special Article. Seniors. Second semester. Three hours.

Open only to those who receive special permission.

**11. Prose Fiction.** Studies in the structure and function of the leading types of prose fiction. Juniors and Seniors. First semester. Three hours.

**12. Literary Criticism.** Main currents in literary criticism, historical and philosophical. Juniors and Seniors. Second semester. Three hours.



**13. Diction and Usage.** An historical approach to the problem of good English. General principles to guide decisions of questions of grammar, pronunciation, and vocabulary. Juniors and Seniors. First semester. Three hours.

**14. The Teaching of English.** Juniors and Seniors. Second semester. Three hours.

Open only to those who have completed Course 13.

### C. PUBLIC SPEAKING

Professor Rassweiler

The work in Public Speaking is designed and conducted first of all to intensify impression and to free and empower the impulses of expression. Later these awakened powers are given more technical education. A text-book is used with each course for theory, but the recitation and laboratory periods are used for actual practice in the art of public speech. Work in voice, action, and in pronunciation is continued throughout the courses.

In the first four courses, students are required to take eight laboratory periods under one of the assistants. Here students are given a hearing preliminary to presenting their selections before the class, and here more individual work in voice, gesture, and extempore speaking is given.

All candidates for the degree of Bachelor of Arts are required to take two of the first four courses during the first year, course 1 or 2 is advised for the first semester, and course 6 or 8 for the second. Either or both of the remaining two courses may be elected during the Sophomore year.

The courses offered are as follows:

**1 and 2. Story Telling.** This subject is treated primarily not as an elocutionary art, but as the beginning of the study of the art of public address. Each semester. Two hours.

**3. and 4. Interpretation.** The art of discerning, sympathetic, and melodious reading. Each semester. Two hours.

**5 and 6. Effective Public Speaking.** Special attention is given to those principles of oral rhetoric which distinguish effective oral expression from the written form, the construction of speeches with a definite end in view adapted to a particular occasion, the development of a fluent oral vocabulary, and the public speaker's habit of mind. Each semester. Two hours.



**7 and 8. Debating.** Both theory and practice. Each semester. Two hours.

**9 and 10. The Elements of Expression.** A course for those desiring to do advanced work or who want work in Elocution. Problems of teaching are also discussed. First and second semesters. Two hours.

Required for the assistants in the department and elective for others.

**11. Advanced Debating.** First semester. Three hours.

Prerequisite: Course 8.

**12. Oratory.** Special attention is given to vigor and climax, and to the study of masterpieces. Second semester. Two hours.

Prerequisite: Course 6.

**13. Advanced Interpretation.** Special attention is given to emotional reaction and rendition. First semester. Two hours.

Prerequisite: Courses 3, 9, 10.

Alternating with 15.

**15. Dramatic Interpretation and Amateur Dramatics.** Dramatic expression, action, and problems in amateur stage craft. First semester. Two hours.

Prerequisite: Courses 3, 9, 10.

Alternating with 8.

## FUNDAMENTALS

President Hunt

1. The President meets the Freshmen, in four sections, one hour a week the first semester in a study of fundamental truth and the problems of student life. One hour.

The text-book for study is Fisher's small Manual of Christian Evidences.

## GERMAN

Professor Rockwell

1. **Elementary German.** Drill on pronunciation. Elements of grammar. Reading of easy prose. First semester. Three hours.

2. **Elementary German.** Reading of easy prose, free reproduction, vocabulary drill, dictation. Second semester. Three hours.

**3. Intermediate German.** Reading of prose. Practice in speaking and writing German. Vocabulary drill. Dictation. First semester. Three hours.

Prerequisite: Course 2 or its equivalent.

**4. Nineteenth Century Novel.** Rapid reading of leading novels. Practice in speaking and writing German. Second semester. Three hours.

Prerequisite: Course 3.

**5. Schiller.** Reading of leading dramas. Discussion of life and work of Schiller. First semester. Three hours.

Prerequisite: Course 4.

**6. Lessing.** Reading of leading dramas, discussion of life and significance of Lessing. Second semester. Three hours.

Prerequisite: Course 5.

**7. Goethe.** Reading of principal dramas. Discussion of life and work of Goethe. First semester. Three hours.

Prerequisite: Course 6.

**8. Goethe.** Reading of Goethe's prose, discussion of his significance. Second semester. Three hours.

Prerequisite: Course 7.

**9. Nineteenth Century Drama.** Kleist and Grillparzer. Reading of principal dramas, discussion of their life and work. First semester. Three hours.

Prerequisite: Course 8.

**10. Nineteenth Century Drama.** Hebbel and Ludwig. Reading of principal dramas, discussion of their life and work. Second semester. Three hours.

Prerequisite: Course 9.

**11. The German Lyric.** Goethe, Schiller, Heine, Uhland, and minor poets. First semester. Three hours.

Prerequisite: Course 8.

**12. The Last Generation in German Literature.** A brief survey of modern developments in German and Austrian literary life. Second semester. Two hours.

Prerequisite: Course 11.

**14. Teachers' Course.** A brief survey of the materials and methods of the teaching of German. Second semester. One hour.

Prerequisite: Course 11.

**15 and 16. Readings in Biological German.** First and second semesters. Two hours.

Prerequisite: Course 2 or its equivalent.

**17 and 18. Readings in German Chemistry.** See Chemical Engineering 9 and 10.

Prerequisite: Course 4 or its equivalent.

## GREEK

Professor Hamblin

Students entering without preparation in the language can begin Greek in College.

**1 and 2. Greek for Beginners.** An introduction to the Greek language based upon graded selections from Menander, Xenophon, Plato, Herodotus, and the New Testament. By an intensive study of the essential forms, a careful study of the vocabulary of representative Greek authors, and reading easy selections at sight, it is intended to cover in one year an equivalent of the usual Preparatory Course. First and second semesters. Six hours.

**3. Plato.** The Apology and Crito. Special topics in Greek syntax. The life and influence of Socrates. Selections from the Memorabilia at sight. First semester. Three hours.

**4. Lysias.** Select orations, with sight reading and Prose Composition. A study of Attic Oratory. Second semester. Three hours.

**5 and 6. Greek Drama.** One play each of Aeschylus, Euripides, and Aristophanes. Study of the Greek drama, theatre and meters. The development of drama. First and second semesters. Six hours. Alternating with Course 7-8.

**7 and 8. New Testament Greek.** Translation of the synoptic gospels; interpretations; Burton's Moods and Tenses; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. First and second semesters. Six hours.

Alternating with Course 5-6.

**9. Greek Civilization.** Political and Constitutional History of Greece. Influence of Greek civilization and thought on the world. Sophomores. First semester. Three hours.

Required of students in the A. B. Course who do not elect an ancient language.

**10. Greek Literature in English.** A course especially designed for students in the Scientific Courses, that they may become acquainted with some of the Greek masterpieces. The best translations will be studied and explained, and informal lectures will be given on various phases of Greek Literature. Seniors and Juniors. Second semester. Three hours.

**12. Everyday Greek.** Greek words in English, including scientific terms. Intended to teach the use, meaning, and pronunciation of words of Greek origin, to those who have never studied the Greek language. Seniors and Juniors. Second semester. Two hours.

## HISTORY

Professor Colestock

**1. Medieval Europe.** First semester. Three hours.  
Required in the A. B. Course. Freshmen and Sophomores.

**2. Modern Europe to 1815.** Second semester. Three hours.  
Required in the A. B. Course. Freshmen and Sophomores.

**3. English History I.** First semester. Two hours.  
Alternating with History 7.

**4. English History II.** Second semester. Two hours.  
Alternating with History 8.

**5. American History I.** First semester. Two hours.  
Juniors and Seniors. Alternating with History 9.

**6. American History II.** Second semester. Two hours.  
Juniors and Seniors. Alternating with History 10.

**7. English History III.** First semester. Two hours.  
Alternating with History 3.

**8. English History IV.** Second semester. Two hours.  
Alternating with History 4.

**9. American History III.** First semester. Two hours.  
Alternating with History 5.

**10. American History IV.** Second semester. Two hours.  
Alternating with History 6.

**11. Latin America.** First semester. Two hours.  
Alternating with History 13.

**12. The Ancient Orient.** Second semester. Two hours.  
Alternating with History 14.

**13. Contemporary Europe 1815-1920.** First semester. Two hours. Juniors and Seniors. Alternating with History 11.

**14. The Modern Orient.** Second semester. Two hours. Juniors and Seniors. Alternating with History 12.

**Greek Civilization.** (Greek 9). Professor Hamblin.

**Roman Civilization.** (Latin 10). Professor Ballentine.

## HOME ECONOMICS

Professor Carey, Miss Douglass, Miss Fowler, and Mrs. Brown

Instruction in home economics is designed to meet the needs of two classes of students: (1) Students who desire a general knowledge of the subject, but who do not wish to specialize in any phase of the subject; (2) Students who wish to specialize in some particular phase of the subject and make professional use of the training received. Upon completion of the prescribed course leading to the degree of B.S. in Home Economics, the pupil is ready for teaching or for a short practical course as pupil dietitian in a hospital or other institution.

**1. Home Decoration.** This course deals with the furnishing of the home. The object of the course is to develop good judgment and taste in the selection and arrangement of furnishings for the home. Sophomores. First semester. One hour.

**2. Textiles.** Study and identification of cotton, wool, silk and linen; their appropriateness in clothing. Sophomores. Second semester. One hour.

**4. Garment Making.** Elementary sewing; fundamental stitches, hand and machine work, applied to undergarments, darning, mending, machine appliances. Students provide material subject to the approval of the instructors. Juniors. Second semester. Three hours.

**5. Clothing.** Dressmaking and drafting, cutting, fitting and making of skirts, waists and dresses, measurements and drafting of patterns, use of commercial patterns. Seniors. First semester. Three hours.

Prerequisite: Courses 2, 4.



**7. Hygiene.** Home nursing, care of sick room, care of patients, first aid, simple bandaging, hygienic care of the home, relation of the home to the community. Sophomores. First semester. Three hours.

**9 and 10. Household Physics.** This course is designed to provide information relative to domestic engineering by presenting: first, the general principles of the various branches of Physics; second, the household appliances based upon these principles. Classroom work is supplemented by experiments performed in the laboratory by the individual students, and by observation of the methods of installation of various appliances. Juniors. First and second semesters. Six hours.

**12. Elementary Course in Foods.** Selection and preparation of foods; their chemical composition and processes of manufacture. Laboratory work emphasizing fundamental principles of cookery. Sophomores. Second semester. Three hours.

**13. Household Management.** Care of house, choice of household equipment, and labor saving devices; apportionment of income. Juniors. First semester. Three hours.

**14. Food and Nutrition.** Food requirements at various ages in health and in certain diseases. Construction of dietaries. Invalid cookery. Juniors. Second semester. Four hours.

**15. Dietetics.** Food requirements of the individual in health and disease, the nutritive properties of the various foods. Dietaries planned with especial regard to economic and social conditions. Seniors. First semester. Four hours.

Prerequisite: Courses 5, 6.

**16. Institutional Cookery.** Meal-planning with emphasis on the supplying of adequate diet to large groups. Attention to organization of institutional kitchen and lunchroom. Seniors. Second semester. Three hours.

**18. Teachers' Course.** Equipment of laboratories; methods of presenting work; correlation with other subjects; planning and presenting lessons. Seniors. Second semester. Three hours.

**20. Advanced Course in Nutrition.** Physiological, bacteriological and chemical problems of food and nutrition. Special work on infant nutrition. Seniors. Second semester. Four hours.

**21. Descriptive Psychology.** The first semester is given to Descriptive Psychology, in which the facts and laws of the mind are carefully studied. Juniors. First semester. Three hours.



**22. Child Psychology.** A course is also given in Child Psychology, showing the relation of mind and body, and how the ideal of a sound mind in a sound body may be attained. Special attention is given to problems arising out of family and social relations. Juniors. Second semester. Three hours.

## LATIN

Professor Ballentine

**1 and 2. Course for Beginners.** First and second semesters. Six hours.

**3 and 4. Cicero.** (Orations); **Vergil** (Aeneid). First and second semesters. Six hours.

Courses 1-2 and 3-4 are offered for those who are not prepared to pursue the regular Freshman elective.

**5 and 6. Cicero.** (De Senectute); **Pliny** (selected letters); **Roman Comedy** (two or three plays of Terence). First and second semesters. Six hours.

**7. Livy.** First semester. Three hours.

Prerequisite: Courses 5, 6.

**8. Horace** (selections). Second semester. Three hours.

Prerequisite: Courses 5, 6.

**10. Roman Civilization.** Lectures, prescribed reading. Sophomores. Second semester. Three hours.

Required of students in the A.B. Course who do not elect an ancient language.

**11. Juvenal** (the principal Satires). First semester. Three hours.

Alternating with 13.

Prerequisite: Course 7.

**13. Tacitus** (Annals). First semester. Three hours.

Alternating with 11.

Prerequisite: Course 7.

**14. Plautus** (selected plays). Second semester. Three hours.

Alternating with 16.

Prerequisite: Course 8.

**16. Latin Poets** (selections). Second semester. Three hours.

Alternating with 14.

Prerequisite: Course 8.

**17. Roman Philosophy** (Cicero or Seneca). First semester. Three hours.

Alternating with 19.

Prerequisite: Course 7.

**19. Roman Law.** The course does not require a knowledge of the Latin language. Juniors and Seniors. First semester. Three hours.

Alternating with 17.

## LAW

Students who desire to secure an insight into the fundamental principles of law while pursuing their liberal studies are given an opportunity to do so. Albert W. Johnson, A.M., President Judge of the Seventeenth Judicial District, and Cloyd Nillis Steininger, A.M., Attorney-at-Law, are engaged to give instruction on the following subjects, when a sufficient number of students desire the work: Real Property, Personal Property, Contracts, Bills and Notes, Agency, and Partnership.

In addition, subjects directly bearing on law are offered in the Department of Economics and Political Science as follows: Government (Political Science 10), Politics (Political Science 11), Principles of International Law (Political Science 12). There are also offered Roman Law (Latin 19) and Elementary Law (History 15-16).

Students who intend to pursue the study of law should bear in mind that a college degree is not accepted in Pennsylvania in place of the preliminary law examination unless in securing the degree the student has met the requirements in Latin, namely, Four books of Caesar and the Four Orations of Cicero Against Catiline, or their equivalent.

## MATHEMATICS

Professor Bartol, Assistant Professor Everett, Mr. Lowry  
and Mr. Gold

**1. Algebra and Trigonometry.** Freshmen. First semester. Four hours. Prescribed in all courses of study.

**2. Plane and Spherical Trigonometry.** Freshmen. Second semester. Two hours. Prescribed in all courses.

**4. Analytic Geometry.** Freshmen. Second semester. Three hours.

Prescribed in the Engineering and Biology Courses: elective in all others.

**6. Solid Geometry.** Freshmen. Second semester. Two hours.

A college subject for those not taking an Engineering course or the course in Biology.

**7 and 8. Descriptive Geometry.** The course consists in practice in elementary orthographic projection with analytical study. It is basic to Mechanical Drawing. Sophomores. First and second semesters. One hour throughout the year.

Prescribed in the Engineering courses.

**10. Descriptive Astronomy.** The course consists mainly in a study of the earth and its motions, and of the constellations. Sophomores. Second semester. Two hours.

Elective in all courses of study except those of the Engineering departments. Open to Freshmen who have had Solid Geometry.

**11. Differential Calculus.** The theory is developed in the use of limits. Applications are freely made to the problems of Mechanics. Sophomores. First semester. Three hours. Prerequisite, Course 4.

Prescribed in the Engineering courses of study: Elective in all others.

**12. Integral Calculus.** Frequent applications are made to the problems of Geometry, Astronomy and Physics. Sophomores. Second semester. Three hours. Prerequisite, Courses 4 and 11.

Prescribed in the Engineering courses: Elective in all others.

**13. Higher Analytics.** The course covers an elementary treatment of the geometry of three dimensions, surfaces of revolution and higher plane curves. First semester. Three hours.

Elective in all the general courses of study except those of the

Engineering departments. Alternates with Course 15. Juniors and Seniors.

**15. Advanced Algebra.** The course includes an elementary treatment of Determinants and of the Theory of Equations. First semester. Three hours. Alternates with Course 13.

Elective for all undergraduates except those in the Engineering Courses. Juniors and Seniors.

**17. Practical Astronomy.** A study of text-book and of instruments in the Observatory, with some practice. First semester. Three hours. Alternates with Course 19. Juniors and Seniors.

Elective except to Engineers.

**19. Differential Equations.** An introductory study. First semester. Three hours. Alternates with Course 17.

Elective except to Engineers. Juniors and Seniors.

Prerequisite: Courses 11 and 12.

**20. The Mathematical Theory of Investments.** An elementary treatment of the subject. Second semester. Three hours.

Elective for all undergraduates, except those in the Engineering Courses. Alternates with Course 22. Juniors and Seniors.

**22. Teachers' Mathematics.** A reading course in the history and literature of Mathematics, and a study of present day methods of teaching the subject. Second semester. Three hours.

Alternates with course 20. Juniors and Seniors.

**24. Field Astronomy.** Observations are made chiefly with surveying instruments, and computations are made from the students' field notes. Juniors. Second semester. Three hours.

Prescribed for Civil Engineers.

**26. Advanced Calculus.** The course includes centroid and moment of inertia problems from Mechanics, with a brief treatment of Differential Equations. Juniors and Seniors. Second semester. Three hours.

Elective to Seniors in Electrical Engineering and Mechanical Engineering, in the Arts course, and to Juniors in Chemical Engineering.

Prerequisites: Courses 11 and 12.

## MECHANICAL ENGINEERING

Professor Burpee, Mr. Kunkle and Mr. Wilson

**2. Boilers and Engines.** This is a general course dealing in a concrete way with the generation and use of steam for power purposes. The course is largely descriptive and experimental; the text-book work being well supplemented by problems illustrating the subject matter.

The topics covered most fully are the analysis and combustion of fuels; types, construction and setting of boilers together with their auxiliaries. The steam engine and indicator are studied in a general way with special emphasis upon performance of the engine.

The results of the term's work are collected into a single comprehensive form by means of a series of boiler, engine and plant tests which are written up and reported in accordance with the Test Code of the American Society of Mechanical Engineers. Open to those who have taken Physics and Calculus. Text-book, Gebhardt's "Steam Power Plant Engineering", latest edition. Juniors. Second semester. Four hours.

Prerequisite: Mathematics 11 and 12, and Physics.

**3. Steam Turbines.** In this course the Steam Turbine Theory and Design are taken up in detail. A careful study is made of the principles underlying the Impulse, Reaction and Mixed Turbine. The entire field is gone over and the ideas obtained are collected and expressed by actually computing and drawing designs for two machines, one Impulse and one Reaction or Mixed Turbine. Text-book, Moyer "Steam Turbines", latest edition. Seniors. First semester. Four hours.

Prerequisite: Course 2.

**5. Steam Power Plants.** This course deals with the Power Plant as a whole. The matters receiving the major amount of attention are those pertaining to Condensers, Power Plant Auxiliaries, Piping and the general arrangement of the entire plant.

The work of the course culminates in the form of an original design completely worked out and drawings made showing floor plans and detailed sections of all important parts. Text-book, Gebhardt's "Steam Power Plants Engineering", latest edition. Seniors. First semester. Three hours.

Prerequisite: Course 2.



**6. Steam Boiler Design.** This course is almost purely design in character and dwells upon the construction and strength of pressure vessels of various types. Complete calculations and complete detailed drawings are made for the Return Tubular, Scotch Marine and Locomotive types of boilers. Text-book, Haven and Sweet "Steam Boilers and Pressure Vessels". Seniors. Second semester. Four hours.

Required of Mechanical Engineering students.

**7. Steam Laboratory Experiments.** This course is intended to familiarize the student with the instruments and equipment belonging to the Power Plant. Experiments are made on the steam calorimeter, steam engine, indicator, boiler-feed pump, water and steam meters, pipe insulating materials, steam gauges, recording instruments and flue gas analysis. Juniors. First semester. Two hours.

Prerequisite: Physics.

**8. Heating and Ventilating.** In this course a study is made of the various methods of heating and ventilating buildings. Problems are given on the methods of calculating heat losses, removal of foul air and the introduction of fresh air.

Under Direct Heating, hot air, steam vapor and hot water systems are studied. Under Indirect Heating, attention is given to public buildings, theatres, and factories. Complete calculations and drawings for assigned buildings are required of each student. Seniors. Second semester. Four hours.

**9. Automobiles.** In this course the work taken up covers the automobile as a whole and in detail. A study is made of the passenger car, the truck and the tractor.

The text-book work is supplemented by a goodly amount of laboratory work in which cars are torn down and built up and the various parts completely analyzed. Text-book, Hobbs and Elliot "The Gasoline Automobile". Seniors. First semester. Two hours.

Open to Engineering students.

**11. Industrial Management.** This course is intended to give the student an idea of the established methods of managing industrial plants. Various systems of following up work in the plant, classifying materials, keeping of records and dealing with labor are studied. Juniors. First semester. Two hours.

Required of Mechanical Engineering students.



**Visiting Plants.** While there are no definite requirements along this line there are every year several interesting and instructive trips taken by the engineering students.

During the latter part of the first semester of the Senior year the class in Steam Turbines and Steam Power Plants usually spend a week in and about Philadelphia and New York city or in the Pittsburgh district visiting plants manufacturing power machinery. When possible this trip is taken at the time of the Annual Meeting of the American Society of Mechanical Engineers so as to bring the students into touch with the engineers of the country.

In addition to this major trip several trips are made to nearby shops and industries where the students have a chance to see in a concrete way the application of the principles they are studying. It is strongly urged that as many as can, accompany these inspection trips. The expense is borne by the students themselves, but is kept to a minimum.

**10. Shop Work.** Under this head there are taught three branches: Pattern-Making, Foundry, and Machine Shop Practice. The work runs through the second semester of the Freshman Year and the entire Sophomore Year. The work is carried only so far as is considered necessary in order to give the student an intelligent idea as to how machinery and other articles manufactured from metals are made. No attempt is made to turn out finished mechanics, but it is considered desirable that the engineer to some extent understand the work of the mechanic.

**11. Pattern Making.** In this course it is assumed that the student is familiar with the use of wood-working tools. The work starts with the principles involved in the building of actual patterns. Allowances for draught, shrinkage, and machining are taught and the student builds patterns which he afterwards uses in the Foundry.

The course is taught throughout the year, but must be taken at the same time with the course in Foundry. The two are worked together and carry a credit of two semester hours.

**12. Foundry Work.** In this course a study is made of the composition and uses of molding sands and other materials used about the Foundry. Green sand molds, both with and without dried cores, are made and poured. The principles of tamping, venting, gating and the various methods of delivering the pattern from the mold are studied. Attention is given to the construction, operation, and care of the

cupola. The student is taught to make the molds, charge the cupola and pour his own flasks.

The course is taught throughout the year, but must be taken at the same time with the course in Pattern Making. The two are worked together and carry a credit of two semester hours.

**13. Machine Shop, General Course.** In this course the student is taught the mathematical principles of the lathe and similar machines. He is also taught how to operate the lathe, planer, shaper, milling machine and the drill press.

The lathe work starts with plain cylindrical work and advances through tapers, thread-cutting and making of cut gears. After this work is mastered the student is given instruction in laying out and other operations on the table and bench and finally he does some assembling.

The shop practice is supplemented by lectures and problems.

The course runs throughout the year and is required for one semester of all Engineering students. Two hours.

**14. Machine Shop, Advanced Course.** This course is required of the Mechanical Engineering students only and is very general in character. There is no definite outline for the work, but each student is assigned such pieces to work on as his particular need may require. In many cases the piece is a repair for some bit of machinery about the University.

The course is intended to carry to a more practical point the work of the general course. Students in this course are sometimes asked to assist instructing those in the more elementary course. Sophomores. Second semester. Two hours.

## PHILOSOPHY

Professor Harris

The studies in this department embrace Psychology, Philosophy, and Ethics.

**1. Psychology, Descriptive and Explanatory.** First semester. Four hours.

Required of Juniors for A.B. degree.

**3. Abnormal Psychology.** Lectures, text-book, readings, and thesis. First semester. Three hours.

**Physiological and Experimental Psychology.** (Biology 31). Professor Davis.

**4. Philosophy of Mind.** Juniors and Seniors. Second semester. Three hours.

**6. History of Philosophy.** Text-book and Lectures. Second semester. Two hours.

Required of Juniors for A.B. degree.

**Roman Philosophy.** (Latin 17). Professor Ballentine.

**8. Ethics.** Second semester. Three hours.

Required of Juniors for A.B. degree.

**10. Ethics of Plato and Aristotle.** Study of the Republic and Nicomachean Ethics, with collateral readings and thesis. Juniors and Seniors. Second semester. Three hours.

**11. Social Ethics.** Domestic Relations. First semester. Three hours.

**12. Political Ethics.** Duties of Citizenship; Ethics of International Relations, with special reference to present day problems. Second semester. Three hours.

**13. History of Recent Philosophy.** Darwin, Spencer, and James. Juniors and Seniors. First semester. Three hours.

## PHYSICS

Professor Simpson and Mr. Hall

**General Physics.** This course is designed as a culture course and is arranged for students who desire a general knowledge of Physics in its relation to everyday life. The work in the class room demands only a thorough knowledge of Mathematics as covered in the entrance requirements. Students who desire to teach Physics should supplement this course with courses 3 and 4.

**Physics 1. Mechanics, Heat and Sound.** First semester. Two hours.

**Physics 2. Light, Electricity and Magnetism.** Second semester. Two hours.

## PHYSICAL MEASUREMENTS

The following laboratory courses accompany Physics 1 and 2. They cover the entire field of Physics in an elementary way. No elaborate quantitative experiments are undertaken.

**1a. Mechanics, Heat and Sound.** First semester. One hour.

**2a. Light, Electricity and Magnetism.** Second semester. One hour.

### TECHNICAL PHYSICS

This course is designed to meet the requirements for later work in the technical courses. It is required in all the engineering courses and presupposes that the student has passed the mathematics required in these courses.

The instruction consists of lectures, recitations and laboratory work. All important phenomena are illustrated and experimental demonstrations of the principal laws are presented.

**Physics 3. Mechanics, Heat and Sound.** First semester. Three hours.

**Physics 4. Light, Electricity and Magnetism.** Second semester. Three hours.

### EXPERIMENTAL PHYSICS

The laboratory work includes experiments illustrating the general laws in all branches of Physics. The experiments are largely quantitative and use is made of instruments of precision. The work is entirely individual, the student taking notes in the laboratory which are elaborated outside and presented for criticism.

**3a. Laboratory Work in Mechanics, Heat and Sound.** First semester. Two hours.

**4a. Laboratory Work in Light, Electricity and Magnetism.** Second semester. Two hours.

### ADVANCED PHYSICS

The following courses are designed primarily for engineering students, but are open to students who have completed course 3-4 or the equivalent and who have passed two semesters of the Calculus. They are of such a nature that a student who has successfully completed them will be fitted for graduate work in the best Universities and Technical schools.

**Physics 5. Electrical Measurements.** In this course the student is required to make a careful study of the instruments of precision used in electrical testing laboratories for the measurement of current, E. M. F. resistance, capacity and inductance. A careful study is made of the standard cell and primary and secondary batteries. An

exhaustive study is made of the magnetic behavior of iron. First semester. Five hours.

First semester. Lectures, recitations and laboratory. Five hours.

**Physics 6. Heat and Light.** The theory covering the first and second laws of thermodynamics and a large number of problems are studied in the class room. The laboratory work covers the mechanical equivalent of heat; calorimetry, in which the heat value of solid, liquid and gaseous fuels is determined; a careful study is made of electrical methods for measuring temperature. In Light, the student becomes familiar with the spectrometer, spectroscope, interferometer and photometer. Students in Chemical Engineering are required to map emission spectra, study the arc and spark spectra of solids, the spark and flame spectra of liquids and gases, and the absorption spectra of mixtures and coloring materials. Students in Electrical Engineering are required to make a careful study of the efficiency of the various types of electric lamps.

All work in the laboratory is supplemented by written reports in which both general and theoretical results obtained are discussed. These reports afford the basis for criticism of the work.

Second semester. Recitations, lectures and laboratory. Five hours.

## ROMANCE LANGUAGES

Professors Griffith, Belfort, Boland and Mrs. Rockwell

### FRENCH

**1. Elementary Course.** Grammar, easy reading, practice in writing French. First semester. Three hours.

**2. Grammar, Reading, Practice in Writing French.** Second semester. Three hours.

**3. French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Increasing use of French as the language of the classroom in this and succeeding courses. First semester. Three hours.

**4. French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Second semester. Three hours.

**5. Literature of the Seventeenth Century.** Advanced Composition. History of French literature. First semester. Three hours.

**6. Literature of the Seventeenth Century, continued.** Advanced composition. History of French Literature. Second semester. Three hours.



7. (a) **Eighteenth and Nineteenth Century Authors.** Romanticists and Realists. First semester. Three hours.

7. (b) **French Civilization.** Rapid reading, lectures, reports. First semester. Three hours.

8. (a) **Present Day French Writers.** Second semester. Three hours.

8. (b) This course is arranged especially for those preparing to teach French. Second semester. Three hours.

Open only to those who have completed Course 7a or 7b.

## SPANISH

1. **Elementary Course.** Grammar, written and oral composition, drill in pronunciation, dictation, translation of modern Spanish. For beginners. First semester. Three hours.

2. **Continuation of Course 1.** Grammar continued. Special attention given to translation and to conversation. For beginners. Second semester. Three hours.

3. **Intermediate Course.** Review of grammar, composition, translation of plays and poetry, conversation, business Spanish, collateral reading. Open to students who have passed in courses 1 and 2, or have fulfilled the entrance requirements in Elementary Spanish, or who otherwise have satisfied the instructor of their preparation to take the course. First semester. Three hours.

4. **Continuation of Course 3.** Second semester. Three hours.

5. **Advanced Course.** Review of grammar, composition, translation of representative works of fiction, drama, and poetry. Conversation. Introduction to Spanish literature. Open to students who have passed in Spanish 3 and 4, or have done equivalent work. First semester. Three hours.

6. **Continuation of Course 5.** General survey of literature. Lectures on literature. Parallel reading and reports. An essay in Spanish on some phase of the language or literature will be required. Second semester. Three hours.

## SOCIOLOGY AND LOGIC

Professor Martin

2. **Anthropology, Descriptive and Physical.** Sophomores. Second semester. Three hours.

3. **Logic, Deductive and Inductive.** Juniors. First semester. Three hours.



**4. Municipal Sociology.** Juniors and Seniors. Second semester. Three hours.

Alternating with Course 6.

**6. Scientific Method, Principles and Analysis.** Juniors and Seniors. Second semester. Three hours.

Alternating with Course 4.

**7. Sociology, Principles and Theory.** Juniors and Seniors. First semester. Three hours.

## **SURVEYING**

**Professor Drum**

**1. Plane and Topographical Surveying.** Recitations on text, lectures, tests, field practice in each position on corps using transit, Y, dumpy and hand levels, plane table and compass in surveys for area, for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments.

Civil Engineering Course. Sophomores. First semester. Five hours.

**2. Geodetic Surveying.** Recitations on text, lectures, tests, readings and reports from literature of the U. S. C. G. S. and other sources.

Civil Engineering Course. Sophomores. Second semester. Two hours.

**4. Railroad Surveying.** Recitations on text, lectures, tests. Computation, draughting and field practice of simple, compound and spiral curves. Field practice in each position on corps making a preliminary survey for a cross-country railroad. Computations and draughting for determining paper location, including grades, excavation, vertical curves, questions of haul, etc. Field practice in putting in paper location and setting slope stakes. An inspection of portions of the Reading and Pennsylvania tracks in a study of switches, Y's, and crossings.

Civil Engineering Course. Sophomores. Second semester. Five hours.

**5. City and Mine Surveying.** Standard practice in field and office methods in surveys incidental to city and mine work is given. Problems include simple triangulation and base line work, underground and night surveys in carrying azimuth into mine, locating boreholes, driving tunnels, lining up chambers, etc. Problems are solved graphically, trigonometrically and analytically and solutions verified in the field.

Civil Engineering Course. Juniors. First semester. Three hours.

**6. Surveying.** Course for technical students not of the Civil Engineering Course. Recitations on text, lectures, tests. Field practice in the care, adjustment and use of surveying instruments, in surveys for area, topography, curve location, setting grade stakes, building location, foundations for machinery, etc. Computations and maps. Seniors. Second semester. Three hours.

## PHYSICAL EDUCATION MEN

Mr. Glass

The Tustin Gymnasium has been provided for the physical training and development of young men. This is now provided with the apparatus usually found in well-furnished gymnasiums. The Director of the Gymnasium examines every student, taking and recording in a book his physical measurements, and prescribes such exercise as may be required for his physical development. Regular exercise in the Gymnasium is required of the Sophomores and Freshmen.

## WOMEN

Miss Walton

Physical training is required of all women in the College and of all music students who live at Women's College. The course aims to give systematic, progressive exercises which tend to better the health of the students, and to give them grace and muscular co-ordination. Swedish gymnastics, calisthenics, light apparatus work, folk-dances, and games are taught in four half-hour periods each week.

The gymnasium is equipped with wands, dumb-bells, rings, Indian clubs, pulley weights, Swedish boom, and flying rings. There are basketball and volleyball courts and equipment for indoor baseball. Outdoor sports are taught and encouraged, including tennis, skating, and swimming.

All women are given two physical examinations each year to discover any physical weakness and to prescribe individual exercises to be practiced each day. There is ample equipment in the gymnasium for these examinations.

## EXPENSES OF STUDENTS PER SEMESTER

### Men

Tuition and student budget for students not residing in the dormitories .....	\$ 96.00
Tuition, student budget and unfurnished room, including heat and light .....	111.00
Tuition, student budget and furnished room, including heat and light .....	126.00
Extra charge for corner rooms and double rooms ...	3.00

### Women

Tuition and student budget for students not residing in the dormitories .....	96.00
Tuition, student budget, board and furnished room, including heat and light .....	226.00
Extra charge for rooms in Bucknell Cottage and New Residence Hall .....	7.50

### FEEES

#### Department

Biology 6, 9, 13, 14, 25, 26, 28, 29, 30 .....	\$ 5.00
Biology 1, 2, 7, 8, 15, 19, 21, 22.....	10.00
Biology 10 .....	10.00—20.00
Chemistry 1 .....	5.00

Chemistry 2, 5, 6, 7, 8 .....	10.00
Chemistry 3, 4 .....	15.00
Chemistry and Chemical Engineering —Deposit ....	10.00
Chemical Engineering 1, 2, 7, 8.....	15.00
Chemical Engineering 5, 6, .....	10.00
Electrical Engineering 1, 2, 9 .....	5.00
Electrical Engineering 5—Deposit .....	5.00
Home Economics 12, 14, 16 .....	5.00
Mechanical Engineering 9 .....	3.00
Mechanical Engineering 2, 12 .....	4.00
Mechanical Engineering 7 .....	5.00
Mechanical Engineering 13, 14 .....	6.00
Physics 1A, 2A .....	3.00
Physics 3A, 4A .....	4.00
Physics 5, 6 .....	5.00
Surveying 1, 4, 5, 6 .....	5.00

### Miscellaneous

Bachelor's Degree .....	\$15.00
Master's Degree .....	15.00
Special Examination .....	5.00
Delayed Registration .....	3.00
Changed Registration .....	1.00
Extra Hour .....	5.00

### Extra Hour

For each semester hour in excess of the minimum semester requirement for the degree for which a student is

registered, a special fee of Five Dollars is charged if this extra hour is counted toward a degree.

### **Room Deposit**

Every student who applies for a dormitory room is required to make a deposit of Ten Dollars when the room is assigned and this amount will be credited on the bill of the next semester.

Should a student for good reason be unable to enter or to return, the deposit will be refunded provided notice is sent to the Registrar not later than four weeks before the opening of the semester for which the amount was credited.

### **Payments**

All bills are payable within the first ten days of the opening of the semester. Checks should be made payable to the order of Bucknell University and addressed to the Registrar.

Any student who withdraws voluntarily while in good standing, not more than two weeks after the opening of the semester, shall be entitled to a refund of ninety per cent. of his dues for the semester.

Any student who withdraws voluntarily while in good standing after having been in attendance more than two weeks shall be charged for two weeks in excess of the time actually enrolled.

No refund is made to any student who is requested to withdraw on account of conduct or poor scholarship.

### **Dormitory Rooms**

An unfurnished room in a men's dormitory contains a bed six feet by three feet.

A furnished room in a men's dormitory contains a bed six feet by three feet, a mattress, two sheets, counterpane, pillow, pillow case; wardrobe, commode, table, two chairs, and a rug. The room is cared for and the bedding is laundered.

A furnished room in a women's dormitory contains a bed six feet by three feet, a mattress, bureau, commode, wardrobe, table, two chairs and a rug.



# GENERAL REGULATIONS

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## Attendance

Regular attendance is required upon all work in a student's course of study and at the Chapel exercises. Absences, in excess of a limited number, necessarily affect the class standing of a student. The details of the regulations in regard to absences are prescribed by the Faculty Committee on Attendance and Standing.

## Standing

The standing of a student in each course is computed on a scale of 100 and is so reported to the Dean's Office. The report, which is sent to parent or guardian, is recorded by use of the letters A, B, C, D, E, and F. A, signifies a standing from 90 to 100; B, signifies a standing from 80 to 89; C, signifies a standing from 70 to 79; D, signifies a standing from 60 to 69; E, signifies a standing from 50 to 59 and a **condition**; F, signifies a failure.

## Degrees With Distinction

The Degree of Bachelor of Arts or of Bachelor of Science **with distinction** is awarded as follows:

Cum Laude. A candidate is recommended for a degree Cum Laude who has obtained a grade of "A" in one-half of his courses.

Magna Cum Laude. A candidate is recommended for a degree Magna Cum Laude who has obtained a grade of "A" in three-fourths of his courses.

Summa Cum Laude. A candidate is recommended for a degree Summa Cum Laude who has obtained

ed a grade of "A" in seven-eighths of his courses and who has been in residence at Bucknell University at least three years.

### Examinations

The dates of the examination are given in the Calendar. In case a student fails to be present at the examination of his class, for any justifiable reason, his examination will be held at such time as the Faculty may appoint, but in no case is an examination granted a student in advance of the time appointed for the examination of the class.

Unless for very good reasons to the contrary, a student who is granted a special examination will be required to pay a fee of five dollars therefor.

### Public Worship

The College holds religious service in Bucknell Hall. The student body is divided into two sections; each section meets twice a week.

The Women's College holds also an evening service in the Main Building of the Women's College.

### Government

It is assumed that all who enter upon the courses of study in the College do so for the purpose of acquiring an education. The atmosphere of the institution is not that of arbitrary restraint, but of reasonable conformity to reasonable requirements. The College does not wish to place its stamp or bestow its honors upon any one who is not willing to deport himself as a gentleman. Each student is distinctly placed upon his manhood, and if he abuses his privileges, after reasonable caution, he must withdraw from the institution, at the request of the President. Consistent with this ideal the students, with the sanction and cooperation of the Faculty, have organized the

Senior Council composed of the young men and the Student Government Association composed of the young women. Their function is to cooperate with the Faculty in maintaining the traditions and good order of the College both on and off the campus.

### **President's Office Hours**

The President of the University is in his office in the Main College building each morning from nine to ten, if possible. Students are at liberty to call upon him at his home at any time.

### **Dean's Office Hours**

The Dean is in his office in the Main Building at specified hours. He also meets students by special appointments.

### **Office Hours of the Dean of Women**

The Dean of Women will meet in her office College women who may desire advice or assistance from her.

## PRIZES

The prizes are awarded to the persons who in the judgment of the several committees attain the highest degree of excellence among the respective competitors, but no prize is bestowed unless a high degree of merit has been attained by the person receiving it.

### The Prize of the Class of 1871

This prize, established by the Class of 1871, is awarded to the student of the Freshman Class who shall prove himself best prepared for College in the two branches, Latin and Mathematics.

The prize for 1920 was awarded to Nina Grace Smith.

### The Freshman Declamation Prize

A prize is awarded to the member of the Freshman Class who shall excel in declamation at the Annual Contest of the Freshman Class.

The prize for 1920 was awarded to Lewis Hutchinson.

### The Sophomore Prize in Public Speaking

A prize is awarded to the member of the Sophomore Class who shall excel in public speaking at the Annual Contest of the Sophomore Class.

The prize for 1920 was awarded to Karl Krug.

### Declamation Prizes for Women

Prizes for the best declamation are open for competition to the Sophomore and Freshman Classes. The prize for the Freshman Class was awarded in 1920 to Marian Murphy.

The prize for the Sophomore Class was awarded in 1920 to Lillian Mae Russell.

### **The Gretzinger Prize**

In honor of William C. Gretzinger, A.M., the first Registrar, the University offers a prize to that member of the Junior Class who shall pronounce the best oration at the Junior Exhibition in Oratory.

No exhibition was held in 1920.

### **The Junior Debate Prize**

Prizes are awarded to the two members of the Junior Class who evince superiority in debate at the Junior prize contest.

The first prize was awarded in 1920 to Ellis Sargeant Smith, and the second to Homer Titus Eaton.

### **The Herbert Tustin Prize**

In memory of his deceased son, the late Professor Francis Wayland Tustin, Ph.D., of the Class of 1856 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Tustin Prize Fund, the interest of which is to be forever paid annually as two prizes, in the proportion of fifteen dollars for the First Prize, and ten dollars for the Second Prize, to the two students of the Senior Class who shall have attained the highest and the second highest standing in Psychology and Ethics (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception".

The first prize was awarded in 1920 to George L. Lowry, and the second to Felix Piekarski.

### **The Herbert Goodman Barrows Prize**

In memory of his son, the Reverend William Barrows, A.M., of the Class of 1867 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Goodman Barrows Prize Fund, the interest

of which is to be forever paid annually as two prizes of equal amounts to the student or two students of the Senior Class who shall have attained the highest standing, respectively, in the Latin and in the Greek language and literature (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception”.

The prize for excellence in Latin was awarded in 1920 to Marguerite Quigley. The prize for excellence in Greek was awarded in 1920 to Elton P. Richards.

### **The Chaplain J. J. Kane Prize**

The Reverend James J. Kane, A.M., Chaplain in the United States Navy, and a graduate from the Theological Department of this University, of the Class of 1867, established a prize which is to be given annually to that member of the graduating class who delivers the best oration on Commencement Day.

The prize was awarded in 1920 to Felix Piekarski.

### **The Bucknell Prizes for Women**

The following prizes for women were founded by William Bucknell, of Philadelphia.

1. A Senior Prize to be awarded to the member of the graduating class of the College, who shall attain the highest grade in the studies of the four years' College Course.

Awarded in 1920 to K. Luetta Wagner.

2. A Senior Prize, to be awarded to the member of the graduating class who, being excellent in scholarship during the Senior Year, shall prepare the best essay.

Awarded in 1920 to Cecil A. Linch.



3. A Junior Prize, to be awarded to the member of the Junior Class, who, being excellent in scholarship during the Junior Year, shall prepare the best essay.

Awarded in 1920 to Emma Fuhrer.

4. A Sophomore Prize, to be awarded to the member of the Sophomore Class who, being excellent in scholarship during the Sophomore year, shall prepare the best essay.

Awarded in 1920 to Leona Dickrager.

5. A Freshman Prize, to be awarded to the member of the Freshman Class who, being excellent in scholarship during the Freshman year, shall prepare the best essay.

Awarded in 1920 to Marian Murphy.

The fund consists of \$2,000, the income from which is to be devoted to these prizes annually in a manner more particularly defined in the donor's communication to the Trustees.

Themes for the Bucknell Essay Prizes will be drawn from works which will be announced by the Professor of Rhetoric each year.

## SCHOLARSHIPS

**General Rules.** Scholarships under the control of the University are held subject to the following rules:

1. Application for a scholarship for any college year should be made before the first of June preceding.
2. Scholarships are held subject to semi-annual renewal, the renewal being conditioned upon the maintenance of an average grade of 80, the continuance of good behavior and the assurance of continued financial need.
3. Credit for half the amount of the scholarship is given at the beginning of each semester upon presentation at the Registrar's office of a voucher signed by the President of the University.

A Permanent Committee on Scholarships, consisting of the President, the Dean, and the Registrar, has the following scholarships at its disposal:

1. **The William Bucknell Scholarships**, twenty in number and of \$1,000 each, were established for the purpose of aiding worthy young men in securing an education with which to increase their usefulness in life. The income from the fund is to be paid annually to twenty young men, in accordance with rules which will be made known upon application to the Committee.
2. **The Ministers' and Missionaries' Children Scholarships** are established upon the general foundation for the benefit of the children of ministers and missionaries of all denominations, in active service.
3. **The Longan Scholarship** was established by a legacy of O. W. Longan, Esq., and is available for a student for the ministry from Lycoming County, Pennsylvania.

4. **The Lewis E. Jones Scholarship** was established by a legacy of the late Lewis E. Jones and is available for a student of Welsh descent.

5. **The John Howard Hare Scholarship** was established by the Reverend Calvin Aurand Hare, A.M., in memory of his son, John Howard Hare, and is available for a student for the ministry upon recommendation of The Pennsylvania Baptist Education Society and of the President of the University.

6. **The Velola E. Hall Scholarship** was established by the Reverend Henry Chandler Hall, A.M., Class of 1882, in memory of his daughter, Velola E. Hall, A.B., Class of 1904, and is available for a student in the Women's College.

7. **The William V. Wilson Scholarships**, two in number, were established in memory of the Reverend William V. Wilson, D.D., of New Jersey.

8. **The Esther Owens Scholarship** was established by a gift of Miss Esther Owens.

9. **The William Albion Cook Scholarship** was established by Mrs. Augusta M. Cook in memory of her son, William Albion Cook, Class of 1899 and is available for a student in the Men's College.

10. **The Service Scholarships**, twenty-five in number, are maintained on the general foundation. They provide fifty dollars each, in return for which clerical work is required to the amount of the scholarship.

11. **The DuPont Scholarship** is granted annually to a senior student in Chemical Engineering designated by the Professor of Chemical Engineering.

Beside these, the following scholarships are granted as stated:

12. **The Livingston Scholarships**, twenty-two in number, were established by a legacy of M. B. Livingston,

and are available for students for the ministry designated by the Pennsylvania Baptist Education Society.

**13. The Weaver Scholarships** were established by a fund of \$10,000, the gift of Colonel Joseph Kerr Weaver, A.M., M.D., Class of 1861 and were named by action of the Board of Trustees in honor of Doctor and Mrs. Joseph K. Weaver. The holders are designated by Dr. Weaver.

**14. The Philadelphia Alumnae Scholarship** was founded by the Philadelphia Alumnae Club, and is available for a woman student from Philadelphia designated by the Club.

### **The Loan Fund for Women**

In June, 1887, there was organized a society for the purpose of assisting young women of limited means to obtain an education. A fund was established by gifts from Alumnae and friends, and is controlled by an Executive Board.

The money is loaned to worthy young women who obligate themselves to return it without interest as soon after graduation as they may be able.

Applications for loans should be made to the Executive Board before the opening of each semester. No loans are granted until the applicant has been a student in the College for at least one semester.

Contributions to the Fund are solicited and should be sent to the Treasurer, Mrs. J. T. Judd, Lewisburg, Pa. A contribution of one hundred dollars constitutes the donor a Life Member of the Society.

Information will be given by the President, Mrs. Katherine B. Larison, Lewisburg, Pa., or by the Secretary, Mrs. Llewellyn Phillips, Lewisburg, Pa.

# COLLEGE ACTIVITIES

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## REGULATIONS

The College encourages and directs all activities consonant with the normal life of college students. The Faculty, therefore, has appointed a committee on student activities and has defined its duty to be:

(1) to supervise the accounting and to audit the accounts of all college organizations, non-fraternity in nature, that collect and disburse funds and whose management is not controlled by the Board of Trustees,

(2) to pass upon the scheduling of all public activities of organizations of the College not controlled by the Board of Trustees and to pass upon the scholastic eligibility of students participating in all public activities.

The treasurer of any college organization, class or committee is required to submit his accounts for audit to the committee at least once a year or as frequently as requested by the committee.

Before any public activity of those student organizations under the jurisdiction of the committee on student activities is scheduled, application for permission and a date must be made in writing to the committee. The committee on student activities has the right to prohibit a student from participating in any public activity whenever, in the opinion of the committee, such participation is detrimental to his college work.

## ATHLETIC ASSOCIATION

The Athletic Association of the College has been formed to encourage and regulate athletic sports. This Association in all its activities is subject to Faculty regulations and supervision, but considerable liberty is allowed it in carrying out its purpose. The usual intercollegiate sports are



fostered, and match games are arranged with other colleges. The general management of athletics is in the hands of a committee, consisting of the President of the Athletic Association, the President of the University, ex officio, two faculty members, chosen by the faculty or appointed by the President of the University, and twelve alumni, appointed by the Board of Trustees. The business management of the Association is in the hands of a graduate manager.

### CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association aims to maintain religious ideals and to promote religious knowledge among the men of the College. It holds regular devotional meetings and conducts Bible and mission study classes.

The Young Women's Christian Association holds regular meetings on Tuesday evenings. It aims to maintain a religious atmosphere in the Women's College and it also conducts Bible and mission study classes.

### CLASS ORGANIZATION

Each class is organized with a president and the other usual officers. The classes meet for the election of officers on the first Friday of the College year at three o'clock in the afternoon. The officers thus elected serve for one year or until their successors qualify.

### DEPARTMENT CLUBS AND SOCIETIES

Students who intend to pursue law have organized a Law Club. The medical students have organized a Medical Society. The Department of Mathematics has organized the Bucknell Mathematics Club. Other departments have similar organizations. The Civil Engineering, the Chemical Engineering, the Electrical Engineering, and the Mechanical Engineering students have their respective societies. The last two are branches of national societies and



hence local members are accorded the privileges of the national bodies. All these organizations hold regular meetings. Members present original papers and at times lecturers of prominence address the societies.

### DRAMATIC, LITERARY, AND MUSICAL ORGANIZATIONS

The young women of the College have established the Frill and Frown, the young men the Cap and Dagger. Both of these dramatic organizations present each year at least one play.

There is also an association for the promotion of Inter-collegiate Debating.

The Lyceum has been organized to promote expression in art and literature.

The Glee Club consists of young men selected by the Professor of Music. It holds regular rehearsals and gives concerts at the University and in adjacent cities. During the vacations it makes tours.

### FRATERNITIES

No student is permitted to join a fraternity until he has received a certificate from the President of the University, under seal, that he has been a student for one year in the College, that he has completed one year's work and that his conduct has been satisfactory. However, a student who has completed one year's work at another college may join a fraternity at the close of the first semester, provided his conduct has been satisfactory.

### STUDENT PUBLICATIONS

The students of the College publish a weekly paper, the Bucknellian, also a daily Commencement News during Commencement Week. The Junior Class publishes every year an annual, L'Agenda; the Y. M. C. A., The Handbook.

# SEVENTIETH ANNUAL COM- MENCEMENT

Wednesday, June 16, 1920

## DEGREES IN ARTS

### Master of Arts

Roy Allen DeLong  
Lewis Abram Eaton  
Earl Edward Hinman

Charles Walter Lotte  
Herman Frederick Reich  
George Edward Schilling

### Bachelor of Arts

Margaret Irène Brown  
Elthera Glenn Corson  
Chloe Pearl Crossley  
Herbert Setley DeLong  
Marion Ellenbogen  
Beatrice Miriam Fetterman  
Harry Clarence Fries  
George Ewan Gaskill  
Herbert Clair Greenland  
Evan William Ingram  
Pearl Aileen Lott  
Henry Lewis Moore Davis  
Helen Louise Moyle

Robert Mitchell Neal  
Felix Piekarski  
Marguerite Isabelle Quigley  
Walter Dry Roos  
Charles Afflerbach Reed  
Elton Phillips Richards  
Marion Riess  
Julius Frederick Seebach  
George Addison Smith  
Russell Ray Stout  
Nathaniel Tietelbaum  
Charlotte Volkmar  
George Washington VanDyke

Harry Redcay Warfel

### Bachelor of Philosophy

David Raymond Cosgrove  
Josiah Lester Houser

Willard LeGrande Lewis  
Margaret Helen Trump

## DEGREES IN SCIENCE

### Master of Science

Leslie Harland Campbell

Elizabeth Fairchild Spyker

Elizabeth Ward Stephens

### Master of Science in Biology

Hugh Max Bullard

Mary Marguerite Downer

**Master of Science in Chemical Engineering**

Earle Baxter West

**Master of Science in Electrical Engineering**

Voris Blaine Hall

Sidney James Peale

Louis Walton Sipley

Frank Edward Stetler

Hiram Jacob Wagner

**Master of Science in Mechanical Engineering**

Emil William Holinger

George Merrill Kunkle

**Bachelor of Science**

Martha Esther Achenbach

George Walter Lees, Jr.

Robert Kinsloe Bell

Cecilia Abihail Linch

Thirza May Bromley

George Post Little

Ruth Prettyman Clark

George Loxley Lowry

Daymond Wallace Copeland

Frances Ada McFarland

James Campbell Craig

David James Martin

Ethyle Douglass Culbert

Andrew Russell Mathieson

Joseph Daykin Dent

Charles Warren Miller

Errol Hunt Derby

Charles Byron Moore

Ralph Miller Dyer

Glenn Edward Ott

Lewis Abram Eaton

James Alfred Pangburn

Charles Malcolm Emerick

Elizabeth Narcissa Patterson

Julius Orville Fraker

Hayes LeRoy Person

Edith Amanda Gardner

Helen Reed

Marion Kathryn Goho

Dwight William Rude

Mary Arbutus Harner

Mary Pauline Schenck

Adda Hayman

William Everett Clark Speare

Henry Uriah Heckart

Anna Leila Sterling

Thomas Jacob Shafer Heim

Harold Andrew Stewart

Agnes Hoffman

Herbert Elisha Stover

Irvin Valentine Holmes

Dorothy Villinger

Morris Daniel Hooven

Robert Norman Waddell

Louisa Howells

James Royall Waldron

Katherine Ellen Johnson

Helen McCormick Walton

Miller Alanson Johnson

Orville Clyde Wrigley

**Bachelor of Science in Biology**

Merrill Wilson Brown

Evelyn Gwendolyn Powell

Robert Leon Bucher

Abraham Lincoln Sherk

Francis Luther Coulson Heikes

Kathryn Luetta Wagner

Harold Edward Miller

Henry Meyer Weber

Adelia Lovinia Wilkes

**Bachelor of Science in Chemical Engineering**

George Norman Benjamin	Charles Vernon Iredell
Dawson Floyd Bloom	John Arlington Mason
Lambert Teufel Botts	William Wallace Masterton
Leslie Harland Campbell	Clarence Henry Pontius
Nelson Ellsworth Chance	Archibald McCormick Rippel
Stephen Frederick Dimlich	Anthony Alfonse Schwenkler
Mark Reuben Everett	Warren Henry Slocum
Robert Boyer Faust	Robert Bruce Smith
John Clayton Yon	

**Bachelor of Science in Civil Engineering**

Vincent Paul Connelly	Wilbur Barner Ream
William Roy Heckendorn	Furman Watson Shaw
Edward Clinton Kolb	Walter Stanley Shoffstall
Donald William Korth	Daniel Ridgeway Steele
Stephen Fraley Puff	Robert Charles Umlauf
Harry John Wagoner	

**Bachelor of Science in Electrical Engineering**

Lester Adam Herb	Henry Clay Lucas
Ernest Wellington Hewitt	Sidney James Peale
Llewellyn Jones	James Edward Robbins
Hiram Jacob Wagner	

**Bachelor of Science in Mechanical Engineering**

John Nevin Bauman	Lester Eugene Lighton
Howard Judson Hanin	Harry LeRoy Nancarrow
Emil William Holinger	William John Rolfe
Robert Simington Kyle	Paul Stolz
Walter Larison Lees	Theodore Courtlandt Williams

**Bachelor of Science in Home Economics**

Mary Kathryn Glover	Esta Minnie Long
Margaret Snover Siple	

## DEGREES WITH DISTINCTION

## Summa Cum Laude

George Loxley Lowry

Kathryn Luetta Wagner

## Magna Cum Laude

Irvin Valentine Holmes

Lester Eugene Lighton

Morris Daniel Hooven

Charles Warren Miller

Evan William Ingram

Marguerite Isabelle Quigley

Margaret Helen Trump

## Cum Laude

Ruth Prettyman Clark

Felix Piekarski

Elthera Glenn Corson

Helen Reed

Herbert Setley DeLong

Elton Phillips Richards

Marion Ellenbogen

Marion Riess

Mark Reuben Everett

Archibald McCormick Rippel

Herbert Clair Greenland

Walter Dry Roos

Mary Arbutus Harner

Dwight William Rude

Henry Uriah Heckart

Warren Henry Slocum

Louisa Howells

Robert Charles Umlauf

Harold Edward Miller

Dorothy Villinger

Robert Mitchell Neal

Charlotte Volkmar

Glenn Edwin Ott

Robert Norman Waddell

Hayes LeRoy Person

Harry Redcay Warfel

## HONORARY DEGREES

## Doctor of Divinity

Thomas Teifion Richards

Charles Abbot Walker

**Certificates in Home Economics**

Andrea Arline Baumeister  
Vera Evelyn Haas  
Geraldine Harriet Kocher  
Alto Grace Nickum  
Charlotte Elizabeth Peters

Grace Matilda Swan  
Emily Robinson Tregellas  
Sallie Grace Vickers  
Lois Kathryn Wentling  
Mary Elizabeth Wickum

**Diplomas in Music**

Norman Roy Appleton, Voice  
Elthera Glenn Corson, Voice  
Merrill Brown DeWire, Voice  
Charles Evans, Pipe Organ and Theory  
Esther Marie Fleming, Violin  
Josephine Iva Greene, Supervisor's Course, Voice and Theory  
Mary Ellen Harris, Voice  
Mittie Deborah Mark, Supervisor's Course and Theory  
William Moyer, Voice  
Stephen Fraley Puff, Teachers' Course in Voice  
Marion Riess, Piano  
Bertha Elizabeth Roush, Piano and Theory  
Julius Seebach, Voice  
Ellen Mae Smith, Supervisor's Course  
Margaret Edna Stevenson, Piano and Theory  
Russell Ray Stout, Voice  
William Charles Willman, Voice



# STUDENTS

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## RESIDENT GRADUATES

Name	Address
Elbina L. Bender	Lewisburg
Mary Kathryn Glover	Vicksburg
John Steiner Gold	Turbotville
George Loxley Lowry	Friendship, N. Y.
Henry Clay Lucas	Lewisburg
Harold Edward Miller	Lewisburg
Benjamin James Wilson	West Pittston

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## SENIORS: CLASS OF 1921

Name	Address
Lester Kelly Ade	Williamsport
Robert Walter Angstadt	Lewisburg
Edna Mary Baker	Lewisburg
Vincent Arthur Baldauf	Reynoldsville
Charles McKnight Bashore	Mifflintown
George Harold Beattie	Shippensburg
Mary Elizabeth Beirne	Wilkes-Barre
Matilda Eliza Bell	New Millport
Luke Reynolds Bender	Milton
Sarah Musser Bernhardt	Lewisburg
Charles Franklin Brandt	Sharon
George Hobart Brown	Morristown, N. J.
John Packer Haas Carter	Sunbury
Richard Theron Carvolth, Jr.	Peckville
Clara Margaret Casner	Newberry
Victor Gordon Clare	Millville, N. J.
Hilda Dixon Coates	Wilkes-Barre
Barbara Helen Coe	Indiana
Marguerite Nancy Coe	Indiana
Lydia Coene	Paterson, N. J.
Willard Henry Collins	Lewisburg
Clarence Anderson Davis	Nanticoke
Elizabeth Lillian Davis	Nanticoke

Name	Address
Herbert Nathan Derr	Milton
Emily Kathryn Devine	Dunsmore
Merrill Brown DeWire	Lewisburg
Lottie Noreene Dietz	Danville
Esther Virginia Dodson	Westmont, N. J.
Thomas Raymond Dorris	Nanticoke
Holmes Tomlin Douglass	Cape May Court House, N. J.
Homer Titus Eaton	Erie
Catherine DeEtte Edgett	Olyphant
Walter Pierson Edwards	Gouldsboro
Harold Spencer Eisley	Lewisburg
Stuart Albright Epler	Reading
David Hobart Evans	Wilkes-Barre
Anna Gladys Fairchild	Milton
Hattie Cole Fertig	Lewisburg
John Craig Finnegan	Belford, N. J.
Grace Rau Follmer	Milton
Emma Magdalena Fuhrer	Scranton
Katharine May Fulford	Morristown, N. J.
Albert Leslie Gandy	Cape May Court House, N. J.
John Augustus Gray, Jr.	Milton
Elizabeth Dunbar Groff	Montgomery
Arthur Earl Harris	New Castle
Robert Paul Hartz	Reading
Alan Richard Haus	Reading
Richard Roy Heckart	Sunbury
Edward Fielding Heim	Lewisburg
Henry LeRoy Heller	Reading
Grant Oswald Herb	Snydertown
James Leo Hess	Lewisburg
Ethel Mae Hoffman	Neffs
Cameron Burnsides Holter	Howard
Robert Leon Hulsizer	Milton
James Bigger Hutchison	Scottdale
Luther Paul Ilgen	Mifflinburg
Eugene Kallay	Leechburg
Russell Foulke Keller	Quakertown
Sarah Anna Kerstetter	Lewisburg
Clarence Hoffman Key	Millville, N. J.
Denzil King	Muncy
Elvin LaRue Kohler	Hughesville

Name	Address
Joseph Kostos	Mt. Carmel
Stanford LaRue Kunkle	Newberry
Donald Sheeder Laher	Everett
Hilding Alfred Larson	Port Allegany
Martha Leiser	Lewisburg
Dorothy Amelia Lent	Lewisburg
William Wallace Lewis	Trevorton
Voris Albert Linker	Williamsport
J. Milton Lord	Lock Haven
Marguerite Theresa Lotte	Paterson, N. J.
John Russell Lowman	Johnstown
Freda Crowl Mackereth	Elkview
Hannah Farr Madison	Muncy
Thomas James Mangan	Charleroi
Edna Martin	Lewisburg
Richard Armstrong Mason	Boise, Idaho
Winfield Scott Masters	Taylor
Floyd Kline Mayhood	Blairsville
Irene McAllister	Mckeesport
Marjorie Bernice McCoy	Jersey Shore
Harold Clyde McCullough	Washington
Francis Patrick McDermott	Houtzdale
Dorothy Conrad Meixell	Lewisburg
Carl Adam Metz	Scranton
Katharine Miller	Port Allegany
Martin Keller Mohler	Ephrata
Clarence Byron Moore	Reedsville
Thomas S. Morgan, Jr.	Paterson, N. J.
Ruth Lillian Mount	Summit, N. J.
George Besold Nesline	Sunbury
Newton Franklin Newman	Lewisburg
William Edgar Nichols	Williamsport
Ella Bolton Osbourn	Lewisburg
Aelred Leo Quinn	Great Neck, N. Y.
Francis Fess Reamer	Pittsburgh
Rachel Mary Reed	Maplewood, N. J.
Charles Frederick Rieckenberg	Great Neck, N. Y.
Alexander Roller	Picture Rocks
Nelson Samuel Rounsley	Millerstown
Thaddeus A. Salaczynski	Nanticoke
Roy William Sauers	Mifflinburg

Name	Address
George Jay Bevier Schuyler	Williamsport
Howard Carl Shelly	Hazleton
Harold Lawson Shimer	Milton
Herman Deane Schultz	Moorestown
Charlotte Walton Siple	Nicholson
Chelton Winthorpe Smith	Lewisburg
Ellis Sargent Smith	Rochester, N. Y.
Roswell Oscar Barnett Smith	Morristown, N. J.
Verna Lois Smith	Mahanoy City
Dorothy Marie Spangler	Milton
Kathryn Pfenninger Spotts	Lewisburg
Marjorie Elizabeth Sprout	Picture Rocks
Alfred Tennyson Steininger	Lewisburg
David Hadden Stewardson	Jersey City, N. J.
Selah Wood Sutton	Morristown, N. J.
Frank Thompson Taylor	Trenton, N. J.
Harry Vernon Thomas	Wheeling, W. Va.
Franklin Schreyer Townsend	Milton
Lulu C. Tyson	Montgomery
Ella LaRue Unger	Shamokin
Stephen James Wargo	Strong
Elsie Watson	Frostburg, Md.
Elizabeth VanScoyoc Weidner	Vineland, N. J.
Ralph Emerson Wilkinson	Trevorton
Thomas Stuart Williams	Wilkes-Barre
William Charles Arthur Willman	Mt. Carmel
Leonard F. Worthington	Eagles Mere
John Lee Yarnall, Jr.	Lewisburg

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## JUNIORS: CLASS OF 1922

Name	Address
Alexander Aloysius Aleshouckas	Great Neck, N. Y.
John Detki Alexander	Philadelphia
Donald Cargill Allen	Lewisburg
Anna Kathryn Althouse	Wyomissing
Mary Elizabeth Appleman	Pittsburgh
Norman Roy Appleton	Philadelphia
Nelle Wolfe Aumiller	Lewisburg
Nellie Carol Balliet	Nanticoke
William Elwood Balliet	Milton
Gordon Preston Bechtel	Reading

Name	Address
Fred Sturges Beers	Dalton
John Robert Beers	Dalton
Sanford Berninger	Mifflinville
Raymond R. Beyer	Bloomsburg
Ruth Hanna Brown	Ewan, N. J.
Eve Bolles Bunnell	Montrose
Rhea Ardelle Burgett	Homer, N. Y.
Jennie Burke	Bordentown, N. J.
Phillip Clarence Campbell	Danville
Ivar Carl Carlson	Port Allegany
Forrest Nathaniel Catherman	Mifflinburg
Marie Josephine Chambers	Nanticoke
Milton Evans Coe	Factoryville
Florence Dorothy Cornwell	Plainfield, N. J.
Elizabeth Couffer	Harrisburg
George Raymond Crawford	Mifflinburg
Edward Craver Crowl	Elysburg
Forest Franklin Dagle	Northumberland
Howard Thomas Davenport	Plymouth
Daniel Webster Davis	Nanticoke
Dearle Faye Davis	Allenwood
Dorothy Luana Davis	Berwick
Nelson Fithian Davis, Jr.	Lewisburg
Phoebe Beatrice Davis	Olyphant
William Powell Day	Brookside
William LeRoy Dehaven	Duncannon
Chester Henry Derck	Trevorton
Lillian Jane Derr	Turbotville
Leona Sophia Dickrager	Tionesta
Charles Emory Diffendafer	Nanticoke
Charles Raymond Dwyer	Pottstown
Myra Catharine Effinger	Altoona
Richard K. Estelow	Mt. Holly, N. J.
Virgil David Evans	Cleveland, O.
Margery Genea Farley	Mifflinburg
Joseph Marion Fitting	Enders
Esther Marie Fleming	Nutley, N. J.
Harold Gustav Florin	Johnsonburg
Edna Mae Follmer	Milton
Frederick Alfred Foxall	Wilkes-Barre
Grace Carver Fry	Duncannon

Name	Address
Walter Denton Galbraith	Johnstown
Arthur Funk Gardner	Harrisburg
Mark Kuebler Gass	Sunbury
Bright Ellsworth Greiner	Winfield
Lewis Gene Griffiths	Scranton
Lucile Anita Gutelius	Mifflinburg
Ralph Franklin Hartz	Reading
George Webster Haupt	Sunbury
Hulda Dorothea Heim	Williamsport
Eloise Ernestine Hill	Williamsport
Cyrus Hoffa	Wilkes-Barre
Wade F. Hoffman	Vandergrift
William Alexander Hoffman, Jr.	Chadd's Ford
John Hughes	Hollidaysburg
Isaac Humphrey	Nanticoke
George Talbot Hunt	Syracuse, Neb.
Richard Kelly Hutchison	Altoona
William Jackson Irvin	Lewisburg
Carmault Benjamin Jackson	Woodstown, N. J.
Harry Warren Johnson	Lewisburg
William Spencer Johnson	Harrisburg
Helen Louise Johnston	Altoona
Finley Keech	Netcong, N. J.
Oliver Linton King	Quakertown
Ruth King	Muncy
Harriet Pauline Kinsman	Plymouth
Angeline Ruth Kissinger	Reading
Helen Felicia Kitlowski	Nanticoke
Adam Alfred Klein	Wilkes-Barre
Leander Swartz Klingman	Sunbury
Karl Krug	Reading
Emma Lilian Kunkle	Newberry
Emily Krissinger Kurtz	Berlin
Hugh David Kyttle	Nanticoke
Elizabeth Laedlein	Williamsport
Roy Horst Landis	Hershey
Harry LaBerte Lapp	Trenton, N. J.
Lawrence Winters Lawson	Latrobe
Robert Earl Lepperd	Duncannon
Isaac Levine	Paterson, N. J.
William Curtis Litterer	Danville



Name	Address
Welles Norwood Lowry	Carbondale
Reba Eva Mackenthum	Philadelphia
Corinne MacNamara	Thompson
George Mathieson	Munhall
Earl Balliet Mickley	Coplay
Emerson Ralph Miller	Ephrata
Howard Harrison Moore	Reynoldsville
James Frederick Moore	Milton
Effie Muir	Jersey City, N. J.
James Gillaspy Myerly	Wilkes-Barre
Phillip Edgar Opp	Muncy
Mary Rachel Park	Montandon
Stewart U. Patton	Parker's Landing
Harry Immanuel Peterson	Jersey Shore
Kathryn Davis Pettigrew	Olyphant
Susanna Harris Plummer	Quinton, N. J.
Grace Poust	Muncy
Janice Raikes	Philippi, W. Va.
Robert Harold Reitz	Trevorton
Ethel Reba Richardson	Reading
William Jennings Rinebold	Athens
Samuel Perry Rogers	Jeffersonville
Evan Willis Ross	Latrobe
Harry Edward Schaffer	Chambersburg
Paul George Schmidt	Reading
Robert Richie Schultz	Bloomsburg
Ray Pauline Seaman	Lewisburg
Marvin Ayres Searles	Morristown, N. J.
Amorita Muriel Sesinger	Pitman, N. J.
Mary Eldridge Sholl	Burlington, N. J.
Grover R. Short	Lebanon
Edouard Burnside Sisserson	Westfield, N. J.
Ethelwynne Mae Smith	Lewisburg
Laura Louise Smith	Reading
Dewey Alvin Snyder	Muncy
Ralph W. Soars	Philadelphia
Hugh Penn Sowers	Steelton
Catharine Young Stahl	Lewisburg
John Calvin Stahl	Lewisburg
Hannah Edith Steely	Lewisburg
Thomas Reber Stein	Sunbury

Name	Address
Roy Bratton Stine	Tyrone
Louis Karl Stuntzner	Norwood, Mass.
William Herbert Sugden	Wilkes-Barre
Grace Matilda Swan	Altoona
William J. Thomas	Nesquehoning
Jesse Adelbert Thompson	Williamsport
Freeman Thayer Tingley	Dimock
Edwin Wesley Treadwell	Williamsport
Frances Edsall VanCleaf	Stockholm, N. J.
Stuart Mitchell Walter	Sunbury
Clara Wasilewski	Nanticoke
Paul Augustus Weaver	Reading
Edward George Wentzel, Jr.	Philadelphia
Herman Earnest Wiant	Huntington Mills
Robert Alfred Williams	Philadelphia
Charles Imbrie Wilson	Jersey City, N. J.
Kenneth C. Winsor	Norwich, N. Y.
Elmer LaRue Worthington	Eagles Mere

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### SOPHOMORES: CLASS OF 1923

Name	Address
John Alexander Ammerman	Dallas
Charles Eugene Anderson	Reynoldsville
Judson Myron Ash	Lewisburg
Dorothy Auer	Norristown
Marian Ayars	Millville, N. J.
Mary Ethel Bailey	Latrobe
Mable Eliazbeth Baker	Vicksburg
Leonard Clair Baldauf	Reynoldsville
Frank Stanley Bartosawicz	Mt. Carmel
Joseph Bossard Basinger	Johnsonburg
Constance Hunting Bennett	Glassboro, N. J.
Eugene Stoll Biddle	Muncy
Victor Augustin Bihl	Harrisburg
Olive Winfred Billhime	Turbotville
Charles Richard Birch	St. Clair
George Leonard Black	Williamsport
Arda Crawford Bowser	Ford City
Cornelia Ruth Boyd	Dover, N. J.
Marguerite Gordon Brierly	Ocean Grove, N. J.
Jessie Kesson Brookes	Philadelphia

Name	Address
James A. Brown	Pittston
Cleon Ferris Buck	Hughesville
Charles Theodore Bunting	Trenton, N. J.
Harry Roscoe Burrows	Picture Rocks
Ellsworth Eede Caldwell	Rochester, N. Y.
Willard Douglass Callender	Thompson
Worthington Candrick	Olyphant
Lyell Carr	Conneautville
Almet Monroe Case	Waverly, N. Y.
Marcus Marcellus Chapman	Vandergrift
Thomas Middleton Christley	Butler
Donald B. Cloward	Wilmington, Del.
Edmund P. Coe	Factoryville
Carlotta Harriet Conrad	Factoryville
Paul Bouynge Cooley	Carlisle
Anna Mary Coyne	Philadelphia
Bertha Ella Cupp	Williamsport
Elmer Custer	Johnstown
Donald Arthur Dallman	Waverly, N. Y.
Frank Bernard Daniels	Wilkes-Barre
John Henry Daugherty, Jr.	Williamsport
Donald Alerdice Davis	Homestead
Frank Umstead Davis	West Chester
John Anderson Davis	Nanticoke
Robert Mitman Dawson	Watsontown
Harry Oscar Dayhoff	Steelton
Earl DeCoursey	Newtown
Ellis Warren Deibler	Shamokin
Harold Davis Dentler	Milton
Eli Raymond Strunk DeTurk	Griesemersville
Omar Ethan DeWald	Jerseytown
Margaret DeWees	Montrose
John Joseph Dietrich	Reading
Alan Joseph Dinn	Port Washington, N. J.
Stella Domzalski	Nanticoke
Albin Joseph Drapiewski	Nanticoke
Willard Nesbit Durbin	Plymouth
James de la Montagne Earle	Lewisburg
Gladys Emerick	Shamokin
Furman Harold Entz	LaPorte City, Iowa
Hazel Marie Farquhar	West Brownsville

Name	Address
Helen Jean Ferguson	Aspinwall
Anna Marie Fisher	Reading
Elva Bearniece Flanagan	Pittsburgh
Jerome Wayne Frock	Harrisburg
Howard Naugle Fry	Shillington
Lloyd Charles Fry	Montgomery
Joseph Harlyn Fulmer	Olean, N. Y.
Ellis Bailey Garrison	Wilkinsburg
Enoch Anthony Gdaniec	Mt. Carmel
Andrew Martin Gehret	Shillington
William George Gehring	Bridgeton, N. J.
Donald Joseph Gensemer	South Williamsport
Francis Howard Gibson	Wilkinsburg
Albert Harold Gille	Morganza
Carl Frank Goerlitz	Scranton
Nevin Henry Grieb	Tylersville
Dalzell Melvin Griffith	Johnstown
Mary Elizabeth Grove	Lewisburg
Robert John Haberstroh	Scranton
Byron William Hahn	Plymouth
Clair William Halligan	Ephrata
LeRoy Raymond Halliwell	Pottsville
Elinor Solly Hanna	Philadelphia
Paul Edward Harding	Williamsport
Perilla Ravina Harner	Mt. Carmel
Jennie Margaret Harrington	Sunbury
Robert Joseph Hartlieb	Lebanon
Alford Herbert Haslam	Palmerton
Mildred Alice Hayden	Greensburg
Mary Gertrude Heilman	Oakmont
Reeves Walter Hendershot	Ingram
Miles W. Henninger	Shamokin
Seth Arthur Hill	Milton
Walter Liddell Hill, Jr.	Scranton
Elizabeth Dennis Hoffman	Chadd's Ford
Daniel Walker Holloway	Troy
Frank Warren Homan	Philadelphia
Martha Louise Hood	Saltsburg
Florence Elizabeth Horam	Lewisburg
Lester Hipple Horam	Lewisburg
Anna Horoschak	Perth Amboy, N. J.

Name	Address
Harold Hunsicker	Petersburg, O.
Elizabeth Hurst	Norristown
Lewis Delroy Hutchinson	Reading
Charles Grover Hyman	Winfield
Marion Aleths Jack	Wayne, N. J.
Alfred Voris Jacobs	Danville
Frank Joseph Jodzis	Mt. Carmel
Jean Pearle Johns	Cresson
Anna Margaret Johnston	Altoona
James Hayes Jolly	Pittsville
George Hadfield Jones	Homestead
Harold Jones	Wilkes-Barre
Harry Walter Jones	Centralia
Alvin Fred Julian	Reading
James Kenneth Kennedy	Milton
Frances Dorando Keough	Chester, N. J.
Helen May Kerstetter	Lewisburg
Edith Leone Kieser	Milton
Laurence Myron Kimball	Vineland, N. J.
Kathryn Chance Kimble	Vineland, N. J.
John Carlisle Koch	Harrisburg
Stanley Vincent Kostos	Mt. Carmel
Jacob Henry Kutz	Douglasville
Frederick Lauster, Jr.	Harrisburg
Anna Margaret Lees	Juniata
Ruth Ellen Leitzel	Lewisburg
Arlington Reuben Lewis	Palmerton
George Washington Lewis	Vineland, N. J.
Lawrence Delroy Lewis	Watsonstown
Harold Smedley Liddick	Lewisburg
Vivian Beatrice Livingston	Clearfield
Louise Llewellyn	Frostburg, Md.
Kenneth Aldrich Lowry	Friendship, N. Y.
Vernard Elmer Lozier	Stanhope, N. J.
William M. Lybarger	Mifflinburg
Ransom George Lyons	Muncy
Albert Rees Mahoney	Trenton, N. J.
John Joseph Malinowski	Jersey City, N. J.
Paul Carew Mallay	Stanhope, N. J.
Dorothy Agnes Markham	Scotch Plains, N. J.
Robert Markowitz	Pottstown

Name	Address
Harold Charles McGraw	Philadelphia
Frank R. McGregor	Vandergrift
Everitt Samuel McHenry	Hazleton
John Harold Mehlhuish	Dorranceton
Alice Pearl Minch	Tyler Hill
Luther Frederick Miller	Lewisburg
Benjamin Stanley Moore	Pitman, N. J.
Margaret Morgan	Blakely
Norman Watkins Morgan	Nanticoke
Dewey William Morrett	Steelton
Hilmar Mueller, Jr.	Trenton, N. J.
Marion Delphine Murphy	Scranton
Lawrence Emery Murray	Reynoldsville
Natalie Elizabeth Musser	Lewisburg
Thomas Mckinley Musser	Mifflinburg
Marjorie Elizabeth Nichols	Clark's Summit
Joella Phyllis Ottmyer	York
Katherine Lucille Owens	Lewisburg
Lloyd Custer Palmer	Johnstown
Henry Mark Parmley	Mahanoy City
Aravilla Anna Peters	Grampian
Norman Everett Piersol	Honey Brook
Frances Susan Post	Thompson
John Straw Purnell	Lewisburg
Frank Wesley Ransom	Dorranceton
Elmer Lee Reiter	Montoursville
George Reading Rentz	Williamsport
Ruth Adele Reuhl	Roselle, N. J.
Ralph Richards	Altoona
Samuel Harmer Rickard, Jr.	Philadelphia
Malcolm Riess	Mercedes, Texas
Andrew Long Rooney	Holidaysburg
Robert Elven Ross	Ridgway
Alma Winifred Royer	Hazleton
Margaret Hyde Russell	Bedford
Albert Sindoval	Valencia, Venezuela
David Arthur Sangston	McClellandtown
Geraldine Schmucker	Watsonstown
Sherman Richard Schooley	Trucksville
Elsie Donaldson Schuyler	Lewisburg
Martha Marie Shafer	Ridgway



Name	Address
Walter Blanchard Shaw	Lewisburg
Richard William Sheffer	York
William Ayersman Shipman, Jr.	Sunbury
Dorothy Broome Sholl	Burlington, N. J.
Pennell McCoy Shumaker	Sunbury
Jerome Francis Skehan	Reynoldsville
Margaret Elizabeth Smail	Williamsport
Bertha Louise Smith	Philadelphia
Donald Rylance Smith	Lewisburg
Nina Grace Smith	Dawson
Wesley Edward Smith	Altoona
James Jackson Snyder	Winfield
William Grant Snyder	Williamsport
George Washington Sour	Jersey Shore
Earl Emmanuel Sousley	Hamburg
Anna May Speare	Lewisburg
Harry Edward Stabler	Endicott, N. Y.
Jennie Ethleen Stackhouse	Lewisburg
Luke L. Stager	Lebanon
Susanne Edythe Statler	Johnstown
Joseph Homer Steele	New Alexandria
Charles Leonard Steiner, Jr.	Uniontown
Frank William Summerfield	Philadelphia
Rupert Morris Swetland	Mills
Harold Womer Tench	Wilkes-Barre
Baden James Thomas	Nanticoke
Edna Tompkins	Paterson, N. J.
Charlotte Wilson Van Cleaf	Stockholm, N. J.
Harold Franklin Vandermark	Nanticoke
Alvin Snyder Wagner	Lewisburg
Kathryn Franian Wainwright	Lewisburg
James Howard Walter	Claysburg
James Harold Watson	Franklin
Isabella Reinhardt Webster	Conshohocken
Edward Clark Wells, Jr.	Bloomsburg
Albert Leonard Wheat	Millville, N. J.
Hayden James White	Olyphant
Dorothy Frances Wilhelm	Williamsport
Foster Charles Wilson	Olyphant
Herbert Oscar Wilson	W. Pittston
George Carbon Wolfe	Williamsport

Name	Address
Glenn Wesley Wolfe	Milton
Russel Sheldon Wolfe	Point Pleasant, W. Va.
James Marcena Wood	Wilkinsburg
William Guy Woodring	Reynoldsville
Kasper Donald Wren	Steelton
Frank Cort Wright	Latrobe
Russell Decker Yearick	Nittany
Harry Ried Yiengst	Mahanoy City
Gail Borden Young	Plymouth
John F. Zug, Jr.	Asheville, N. C.

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### FRESHMEN: CLASS OF 1924

Name	Address
Howard Edwin Ackman	Port Allegany
Thomas Bellis Ake	Egg Harbor City, N. J.
Grace Hope Allardice	Meshoppen
Franklin Davis Arnold	Lewisburg
Earl Jacob Axe	New Cumberland
Benjamin Baird	Lock Haven
James Harold Beckley	Nanticoke
George Bellack	Johnstown
Irene Emma Benner	Slatington
Louise Morgan Benshoff	Johnstown
Lester Elsworth Berkheimer	Milton
Eleanor Ruth Berry	Mifflinburg
Charles Frederick Bird	Jeannette
John Cooper Bird	Shamokin
Dorothy Bissel	Lewisburg
Lynn Nevin Bitner	Lewisburg
William Jay Bolton	Pitcairn
Winfield Borasky	Simpson
Thomas Hancock Bowen	Salem, N. J.
Glenn Richard Bower	Berwick
Henry William Bressler, Jr.	Sunbury
Edward Bridges	Palmyra, N. J.
Frank H. Brown	Brookville
Mildred Alice Brown	Meshoppen
Mary Anna Brownmiller	Shoemakersville
Charles Kenneth Budd	Budd Lake, N. J.
Edgar H. Butler	Curfew
J. Dwight Butzer	Smethport

Name	Address
Tony Cavalcante	McClellandtown
Jennie Elizabeth Clark	Bradford
Mildred Louise Clayton	Meshoppen
Mary Mildred Clower	West Chester
Kenneth Lorne Cober	Williamsport
Emile Coene, Jr.	Paterson, N. J.
Merle Greene Colvin	Clifford
Adolfo Concha-Goubert	Bogota, Columbia
Willis Dale Conn	Port Marion
Arthur Sheldon Cooper	Austin
Daniel Allen Copenhaver	Hershey
William Opp Courson	Wesleyville
Malcolm Paul Crandell	Towanda
Charles Tice Crosier	Salem, N. J.
Clyde D. Crosier	Thompson
Mary Louise Curry	Malvern
Rose Olive Curtis	Waymart
Charles Frederick Dandois	Jersey Shore
George Edward Danyluk	Buffalo, N. Y.
Florence Turner Dare	Bridgeton, N. J.
C. Preston Dawson	Watsonstown
Ellis Roy Defibaugh	Wilkinsburg
Hilda Bernitice DeWitt	Sunbury
Iva I. DeWitt	Sunbury
Ellis G. Diefenderfer	New Castle
Harry Schroll Diefenderfer	Highspire
Charles Weiser Dinger	Reynoldsville
Francis Hayes Dorey	Lock Haven
Chester A. Drenning	Wrightsville
Earl Sylvester Dunlap	Montoursville
Helen Kathryn Dunsmore	Watsonstown
Daniel Harper Dykins	Muncy
Henry Hensley Eastman, Jr.	Wilmington, Del.
Ronald Eckman	Pleasantville, N. J.
M. Lillian Edmunds	Crafton
Mary Emily Eisenmenger	Williamsport
Frank F. Elliott	Parker's Landing
Carl August Erickson	Great Neck, N. Y.
Mildred Louise Evans	Wilkes-Barre
Margaret Ellen Everitt	Allenwood
Donald Stanley Fairchild	Watsonstown

Name	Address
Helen Evelyn Fairfax	Williamsport
Florence Elizabeth Faus	Mifflinburg
Raymond W. Faus	Mifflinburg
Richard Reed Feight	Bedford
Robert Palmer Fernsler	Sunbury
Helen Gertrude Fisher	Lewisburg
Ralph Rhinesmith Fleming	Paterson, N. J.
Vernon Free Fleming	Williamsport
George MacDonald Forney	Philadelphia
Ruth Fowler	Strawberry Ridge
Joseph Roseberry Gardner	Hackettstown, N. J.
D. Theodore Geist	New Bethlehem
La Rose Gemmill	Windsor
Geneva Gerlach	Hazleton
Stephen Goho, Jr.	Lewisburg
Helen Graham	Sunbury
Robert Russell Gray	Bradenville
Robert Warren Gray	Manor
Lillian E. Greenland	Pittston
Miriam Herr Haldeman	Malvern
Walter James Hall	Shamokin
Lois Hall Hamblin	Lewisburg
Thomas Hammond	Reynoldsville
Levi Francis Hartman	Williamsport
Robert Christian Heim	Lewisburg
Terring Whitfield Heironimus	Grafton, W. Va.
R. Frank Heiser	Mahanoy City
Ida R. Heller	Williamsport
Floyd Grove Hempt	New Cumberland
Charles McMinn Hennen	Fairmount, W. Va.
Herbert William Henning	Dunkirk, N. Y.
Oliver E. Henry	Greensburg
Anna Stewart Heysham	Norristown
Earl Wilson Hill	Lewisburg
Herman J. Himmelreich	Lewisburg
Stephen Andrew Hodoba	Mt. Carmel
Hayward James Holbert	Fairmont, W. Va.
James Holsing	Canonsburg
Mary Margaret Holter	Johnsonburg
Malcolm Whitson Hoopes	West Chester
Elliott Stephens Hopler	Bartley, N. J.

Name	Address
Thomas Ignatius Horan	Locust Gap
Elva Glenn Horner	Derry
Mildred E. Houseman	Altoona
Roland Ogilvie Hudson	Lansdale
Harold Alvin Hutchison	Scottdale
C. Brown Hyatt	Loganton
Foster Duncan Jemison	Princeton, N. J.
Donald M. Johnson	Lewisburg
Helen Elizabeth Johnson	Fairchance
Ruth Irene Johnson	Lewisburg
Elmer Miles Jones	Wilkes-Barre
Malcolm G. Jones	Nanticoke
William Lambert Joseph	Youngwood
Donald Bruce Keim	Danville
Clyde E. Kelly	Scottdale
Guyton Kempter	Chambersburg
Adelaide Louise King	Plainfield, N. J.
Eleanor Grant Kingsbury	Holyoke, Mass.
Peter K. Kingoun	Penn Yan, N. Y.
Albert McKinley Kishbaugh	Nesquehoning
John Weber Kling	Lewisburg
George Dewey Knight	Cogan Station
John Koblish	Plymouth
Russell Maurice Kostenbauder	Aristes
Earl W. Kurtz	Myerstown
George Weston Lamborne	Mullica Hill, N. J.
James Hard Landau	Sunbury
Mary C. Lape	Johnstown
Raymond Hilding Larson	Port Allegany
Gordon Merrill Lenox	Elizabeth
John Eustace Lenox	Elizabeth
Ralph MacLeonard	Columbia Cross Roads
Geddy Gilbert Lesaius	Inkerman
Charles Frederick Lindig	Lewisburg
Eleanor Heim Little	Picture Rocks
Robert Leland Livingston	Clearfield
Mary T. Llewellyn	Avoca
William Llewellyn	Wilkes-Barre
Helen Elizabeth Lockard	Johnstown
George Walter Long	Ardmore
Ivan Hendrick Loucks	Ulysses

Name	Address
Curtis Milton Lowry	Uniondale
Robert W. Machamer	Lewisburg
Maggie Martin	Pittston
Mario Valentine Martin	Coudersport
Florence M. Martz	Washingtonville
Ross A. Mask	Plymouth
James Frank McGill	Bridgeton, N. J.
John Laird McKay, Jr.	Philadelphia
Arthur J. McMurtrie	Muncy
Joe Russell McNutt	Uniontown
Mildred Megahan	Williamsport
Wayne Samuel Mengel	Shamokin
Elizabeth Middleton	Camden, N. J.
Charles W. Miller, Jr.	Pittsburgh
Oliver N. Miller, Jr.	Mahanoy City
John Francis Mitchell	Bell's Landing
Elizabeth Voris Moore	Watsonstown
H. Theodore Moore	Reynoldsville
Donald Murray	Altoona
Henry Benjamin Mussina	Williamsport
Malcolm Vivian Mussina	Williamsport
Randall LaMar Newell	Canton
Harry Virgil Overdorff	Johnstown
Earl Emery Owens	Hemlock, N. Y.
Nicholas Palma	Paterson, N. J.
James Nelson Patterson	Omalinda
Chester William Patton	Parker's Landing
Mary Ruth Peck	Pittsburgh
Mary Elizabeth Peifer	Wilkes-Barre
Ralph T. Perkins	Detroit, Mich.
Amos U. Persing	Allenwood
Grayce Peterson	Monesson
Ralph E. Phillips	Sunbury
Ruth Porter	Oil City
Georgine M. Poust	Hughesville
Ruth Raker	Allentown
Mary Elizabeth Rakestraw	Montoursville
Karen Narholm Rasmussen	Perth Amboy, N. J.
Gerald Mark Rassweiler	Lewisburg
Clifford H. Reed	Lock Haven
Harold E. Reed	Juniata



Name	Address
John Maxwell Reed	Lewisburg
William D. Reitz	Lewisburg
Ralph W. Richards	Altoona
Edwin D. Robb	Howard
Henry T. Rockwell	Monroeton
Sidney George Rosenbloom	Austin
Harry Frederick Roye	Malvern
Sara Alice Ruhl	Lewisburg
Forrest M. Rutherford	Laurelton
Albert Clarence Samley	Pittston
Kermit Leitzel Saxon	Scranton
Harold Luther Schaefer	Cogan Station
Charles L. Schultz	Pottstown
Seward William Seybold	New Kensington
Clarence Merrill Shaffer	Latrobe
Myrtle Gertrude Sharp	Flemington, N. J.
Anthony Sindoni, Jr.	Atlantic City, N. J.
Esther Marion Smith	Berwick
John Howard Smith	Hughesville
Margaret Jean Smith	Paterson, N. J.
Ruth Aileen Smith	Williamsport
Samuel Elias Smith	Lewisburg
Thomas E. Smith	Goshen, N. J.
Louis W. Sobray	Mt. Pleasant
Oliver Thomas Sommerville	Rutherford, N. J.
Clifford Soultz	Great Bend, N. Y.
Clifford Leland Stanley	Williamsport
Lester Clearman Stanton	Waymart
Rachel Marie Steckel	Slatington
Kathryn Rebecca Steckman	Roanoke, Va.
Margaret Bower Steely	Lewisburg
Mary A. F. Stephens	Johnstown
Percy Kenneth Steventon	Nesquehoning
Mary Pauline Stocker	Milton
Alice Eleanor Stokes	Montgomery
Alfred Gordon Stoughton	Jeannette
E. Kedzie Strauser	Williamsport
Milton J. Stringer	Philadelphia
Florence Beatrice Supplee	Northbrook
Paul R. Sweitzer	Plymouth
Walter S. Szorc	Dickson City

Name	Address
Stephen Terpak	Simpson
Robert Burton Thompson, Jr.	Williamsport
Milton Edgar Trainer	Paulsboro, N. J.
Archibald Myglis Van Blarcom	Paterson, N. J.
Emily Van Dyke	Sunbury
Daniel Maneval Villinger	Williamsport
Russell C. Vollmer	Norwood
Elizabeth Margaret Wagner	Smithton
Herbert Carl Wagner	Lewisburg
Elizabeth Sanford Walker	Farmingdale, N. J.
Paul Newton Walker	Verona
Penrose C. Wallace	Windsor
Martha W. Watkins	W. Pittston
LeRoy B. Webb	Watsonstown
Mary Elizabeth Weeter	New Bloomfield
Ruth Hamilton Weidenhamer	Lewisburg
Evelyn Mae Weidensaul	Lewisburg
Jessie Read Wendell	Philadelphia
Roland Morris Wendell	Philadelphia
Ebenezer D. Williams	Nanticoke
Edward Gilbert Williams	Milton
Anthony Carl Wilsbach	Harrisburg
Edwin G. Wilson	Canonsburg
Merritt B. Wilson	Mt. Holly, N. J.
Wendell Holmes Woodside	Clearfield
George Granville Wren	Steelton
Elizabeth Wurtenburg	Wysox
Robert J. Young, Jr.	Snow Shoe
Arthur Gould Zimmerman	W. Pittston
Fred Thomas Zimmerman	Philadelphia
Myrtle Irene Zimmerman	Cresson

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## SPECIAL STUDENTS

Name	Address
Harold Samuel Callen	Shenandoah
John Morris Dooley	Syracuse, N. Y.
Jack J. Hellewell	Philipsburg
Carolyn Julia Hunt	Lewisburg
Frithjoy Iverson	Kristiana, Norway

Otto C. F. Janke  
 Yoshikoze Kanamori  
 Jay Raymond Moran  
 John DeWitt Titman  
 William T. Ungard

West Milton  
 Tokyo, Japan  
 New Haven, Conn.  
 Montrose  
 Watsontown

## SUMMARY OF COLLEGE STUDENTS

Resident Graduate Students .....	7
Seniors .....	133
Juniors .....	151
Sophomores .....	235
Freshmen .....	264
Special Students .....	9
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Total .....	799

## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

## By States

		Crawford	1
Delaware	2	Cumberland	4
Idaho	1	Dauphin	18
Iowa	1	Delaware	2
Maryland	2	Elk	5
Massachusetts	2	Erie	2
Michigan	1	Fayette	7
Nebraska	1	Forest	1
New Jersey	82	Franklin	1
New York	18	Indiana	4
North Carolina	1	Jefferson	11
Ohio	2	Juniata	1
Pennsylvania	661	Lackawanna	24
Texas	1	Lancaster	4
Virginia	1	Lawrence	2
West Virginia	6	Lebanon	4

## By Foreign Countries

Japan	1	Lehigh	4
Norway	1	Luzerne	67
South America	2	Lycoming	72
		McKean	6
		Mercer	1
		Mifflin	1

## By Counties in Pennsylvania

Allegheny	24	Montgomery	10
Armstrong	4	Montour	12
Bedford	4	Northumberland	71
Berks	24	Perry	5
Blair	14	Philadelphia	18
Bradford	9	Potter	4
Bucks	3	Schuylkill	8
Butler	1	Somerset	1
Cambria	13	Sullivan	2
Carbon	5	Susquehanna	10
Center	5	Union	97
Chester	9	Venango	3
Clarion	1	Washington	6
Clearfield	7	Wayne	4
Clinton	5	Westmoreland	22
Columbia	7	Wyoming	7
		York	5

# ALUMNI ORGANIZATIONS

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## THE ALUMNI CLUB OF PHILADELPHIA

President, Dr. Samuel Bolton, '85 4701 Leiper St.  
Secretary, Louis W. Robey, Esq., '04 918 Stephen Girard Bldg.

## THE ALUMNI CLUB OF NEW YORK CITY

President, Rush H. Kress, '00 225 W. 86th St.  
Secretary, Creighton M. Konkle, '01  
48 E. Hawthorne Ave., East Orange, N. J.

## THE ALUMNI CLUB OF PITTSBURGH

President, E. P. Griffiths, Esq., '04 1015 Union Bank Bldg.  
Secretary, Helge Florin 821 Frick Bldg.

## THE ALUMNI CLUB OF CHICAGO

President, W. C. MacNaul, '90 6510 Ellis Ave.  
Secretary, Fred H. Fahringer, '15 2902 91st St.

## THE ALUMNI CLUB OF NORTHEASTERN PENNSYLVANIA

President, James P. Harris, Esq., '12  
609 Coal Exchange Bldg., Wilkes-Barre  
Secretary, Sidney Grabowski, Esq., '14, 417 Connell Bldg., Scranton

## THE ALUMNI CLUB OF HARRISBURG

President, J. A. Tyson, '11 Kunkle Bldg.  
Secretary, W. C. Sprout, '08 % The Patriot, Harrisburg

## THE ALUMNI CLUB OF WASHINGTON

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Secretary, Frank W. Tilley, '98 1311 21st St., N. W.

## THE ALUMNI CLUB OF CENTRAL PENNSYLVANIA

President, Judge Thomas J. Baldrige, ex-'95 Hollidaysburg  
Secretary, Rev. S. F. Forgeus, '72, D.D. Huntingdon

**THE ALUMNI CLUB OF WILLIAMSPORT**

President, Oliver J. Decker, Esq., '99	Trust Bldg.
Secretary, Anne Galbraith, '07	965 High St.

**THE ALUMNI CLUB OF LEWISBURG**

President, Leroy T. Butler, '97	Lewisburg
Secretary, Leo L. Rockwell, '07	Lewisburg

**THE ALUMNI CLUB OF SUNBURY**

President, George Edward Deppen, Esq., '94	Sunbury
Secretary, Cullen Frazer Shipman, Esq., '99	Sunbury

**THE ALUMNI CLUB OF CALIFORNIA**

President, Allan G. Ritter, Esq., '09	1012 Black Bldg., Los Angeles
Secretary, Roy J. Farr, Esq., '08,	716 Merchants' Trust Bldg., Los Angeles

**THE ALUMNI CLUB OF CHINA**

President, Charles Way Harvey, '00	4 Quinsan Gardens, Y. M. C. A., Shanghai
Secretary, Rev. Lewis C. Hylbert, '05	Ningpo

**THE HAZLETON ALUMNI CLUB**

President, Rev. Joseph H. Cooke, '98	Hazleton
Secretary, Nora Dodson, '11	90 N. Laurel St.

**THE WILMINGTON ALUMNI CLUB**

President, Leslie W. Stout, '13	% Industrial Trust Co.
Secretary, Ruth Barthold, '17	% High School

**THE CLEVELAND ALUMNI CLUB**

President, Ralph W. Snow, '94	1024 B. of L. E. Bldg.
Secretary, Helen Moyle Bailey, '20	7816 Lexington Ave.

**GENERAL ALUMNAE ASSOCIATION**

President, Jennie McLaughlin Follmer, Inst., '83	Lewisburg
Secretary, Carrie Foresman, '16	Lewisburg



**PHILADELPHIA ALUMNAE CLUB**

President, Margaret Groff, '04	19 W. Union St., West Chester
Secretary, Carrie McCaskie Wise, '06	23 Mill Road, Ashbourne

**LEWISBURG ALUMNAE CLUB**

President, Evelyn Stanton Gundy, '90	Lewisburg
Secretary, Fanny Getz Brown, Mus., '06	Lewisburg

**THE ALUMNI ASSOCIATION**

The General Alumni Association is the official organization of the Alumni. Membership is open to graduates and matriculates of the college.

The officers consist of a President, a Vice-President, a Secretary, and a Treasurer. The Board of Managers, consisting of the officers and three other members, transacts all business not otherwise provided for in the Constitution.

The annual membership fee, including Alumni Monthly subscription, is \$2.50. The life-membership fee is \$25. To life members the Monthly is sent gratis. Checks in payment of dues should be made out to Frank M. Simpson, Treasurer of the Alumni Association.

The Association is incorporated under the laws of Pennsylvania.

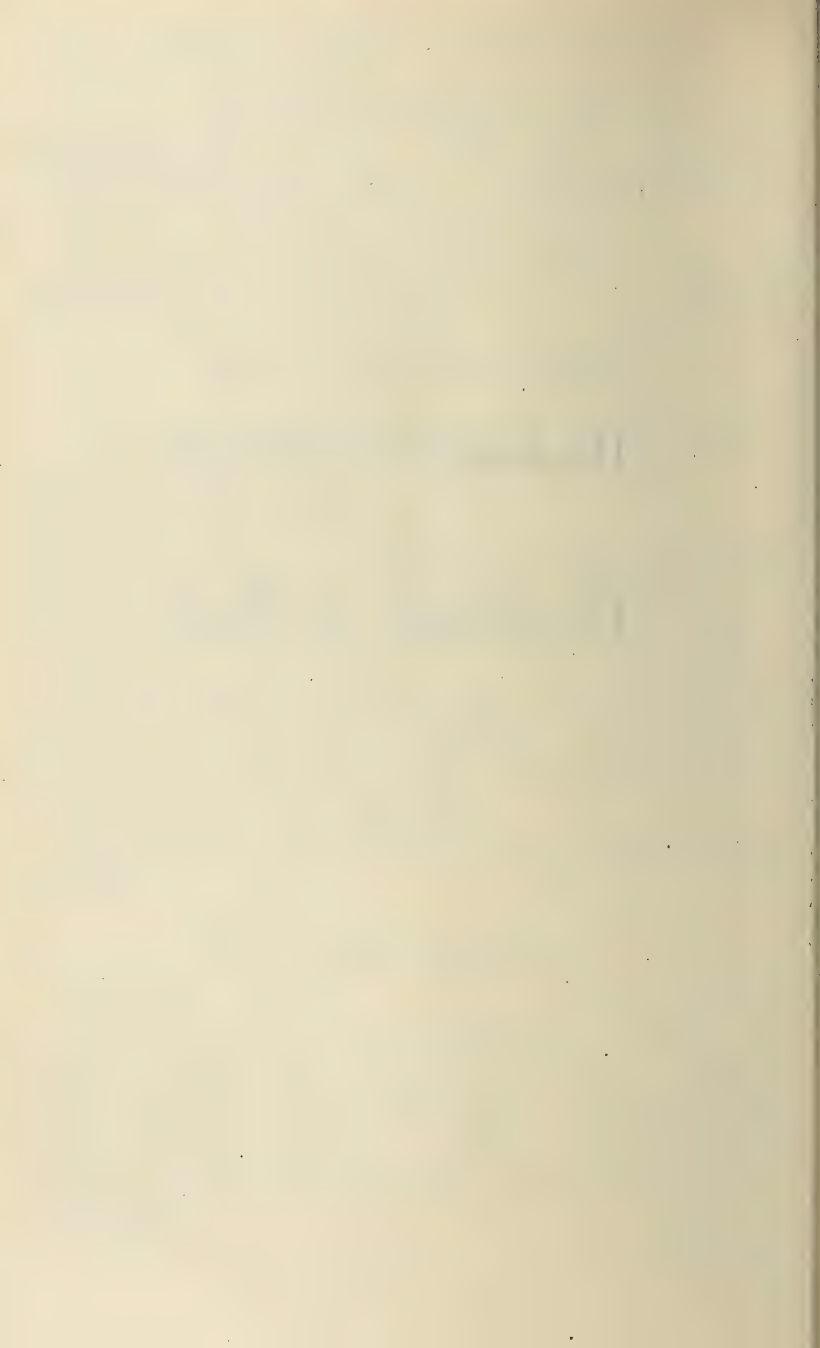
**THE ALUMNI MONTHLY**

The Alumni Monthly is the organ of the Alumni Association. It is published monthly from October to June. It aims to keep the Alumni informed of the progress of the University, of the doings of the Alumni, and so far as possible, of undergraduate activity. It serves also as a clearing-house of Alumni opinion on topics of general interest to Bucknellians.

Bucknell University

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The School of Music



# THE SCHOOL OF MUSIC

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## FACULTY

PAUL GEORGE STOLZ, A.M.

Director, Science of Music, Voice

(Bucknell University School of Music, Dr. Elysée Aviragnet, A.M.;  
Dr. Hugh Schussler, New York; Emrich and Soehnlín,  
Berlin)

CHARLOTTE GUION ARMSTRONG

Violin

(Wyoming Seminary; New England Conservatory; Musin,  
New York City).

ANNA MARTHA PINES

Supervisor's Course

(Bucknell University School of Music; Comb's Conservatory,  
Philadelphia; Cornell University, Ithaca, N. Y.)

MORTIMER HOWARD

Voice

(Will Winch, Boston; Emelio Belari, New York; Tenor Soloist, Mar-  
ble Collegiate Church, New York; Arlington Street Church,  
Boston and First Presbyterian Church, Pittsburgh).

DAVID MOYER

Piano

(Alberta Jonas, Berlin; Ernst von Dohnanyi, Berlin).

JESSIE COOPER MOYER

Piano

(Bucknell University School of Music; Prof. Cruthers, Philadelphia;  
Prof. Briggs, New England Conservatory).

KATHERINE BERGSTRESSER

Piano

(Bucknell University School of Music; Peabody Conservatory of  
Music, George Boyle; Wilson College, Chambersburg).

## JANET S. MENCH

Pipe Organ

(Bucknell University School of Music; Dr. Fred Wolle)

## ELBINA LAVINIA BENDER, A.M.

Pipe Organ Theory

(Bucknell University School of Music, Dr. Elysee Aviragnet, A.M.  
Prof. Theodore Sauerteich, Berlin)

## HELEN ELIZABETH SWARTZ, B.A.

Piano, Harmony

(Bucknell University; Wellseley College; Clarence G. Hamilton;  
Hamilton C. Macdougall)

## EVELYN NEIL FITCH

Voice

(Ithaca Conservatory; Grace Longly; Frank La Forge;  
Madame Newhaus)

## HISTORICAL

Music was first taught at Bucknell University in 1853 by Melville Malcolm under the supervision of the Seminary. Various teachers had charge until 1858, when Monsieur Theodore P. Held, a French artist, took charge with one assistant, and in 1864 he was given a second assistant. In 1865 Monsieur Held's position became vacant, but he again resumed his work in 1866. In 1867 Alexander M. Loos was made Professor of Music. In 1869 Hermann F. Eberhardt took up the duties of Professor of Music and by 1870 there were sixty students enrolled in the Music Department. In 1871 a vocal teacher was added to the music faculty. In 1888 Professor Elysée Aviragnet, M.A., took charge of the Music Department. In 1892 Professor Aviragnet received the degree of Doctor of Music, after which the Music Department was known as the Bucknell University School of Music, one of the Distinct schools of the University, which are one cor-

poration and have one President, who has general charge. Paul Stolz was actively associated with Dr. Aviragnet and his work in the School of Music. He became his assistant, later Assistant Director, and at Dr. Aviragnet's death in 1908, his successor as Director of the School of Music.

In 1920 the music faculty consisted of eleven teachers, four in piano, three in voice, one in violin, two in pipe organ, and one in supervisor's course, with an attendance of one hundred and seventy-seven pupils.



# COURSES OF INSTRUCTION

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## INSTRUMENTAL MUSIC

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### COURSE FOR THE PIANO-FORTE OF FOUR YEARS FOR GRADUATION

The pupil is required to pursue the most thoroughly approved modern system of technical training. After the first rudiments have been mastered, the Course of instruction leads to the practice of études, designed to unite with purely technical drill the requirements of artistic style and expression.

#### COURSE IN PIANO

##### First Year

Musical Exercises and Gymnastics to prepare the hands for playing; Gurlitt, *Technic and Melody*, Book I; Kohler, *Practical Method*; Lebert and Stark, *Instruction Book*, Part I; Loeschorn, Op. 84 and 65; Kohler, Op. 157; Duvernoy *School of Mechanism*, Op. 120; Etudes by Biehl, Lemoine, LeCouppéy, Bertina and Czerny; introductory technical work; Sonatina, Kuhlau, Clementi, Schytte; pieces by Behr, Böhm, Lange, Lichner and others.

##### Second Year

Heller, *Studies*, Op. 45, 46, and 47; Loeschorn, Op. 66; Czerny, Op. 299; Bernes, Op. 61; Easier Mozart, Haydn, Beethoven, Sonatas; Little Preludes by Bach; Bach Inventions, Scales, Arpeggios, and other technical work continued; Salon pieces by Bendel, Kullak, Merkel, Nevin, and other composers; preparatory octave and chord work.

##### Third Year

Czerny, Op. 740; Cramer, 50 Studies; Clementi *Gradus ad Parnassum*; Moscheles, Op. 70; Bach Suites, Handel Suites, Scarlatti pieces, Beethoven Sonatas; introductory Chopin work; compositions by Grieg, Godard, MacDowell, Moszkowski, and others; continued octave and chord work.

## Fourth Year

Bach Preludes and Fugues; Italian Concerto; Chromatic Fantasy and Fugue; Kullak Octave Studies; Selected Chopin Etudes; Liszt Studies; Beethoven Sonatas, Op. 53 and 57; other compositions by Chopin, Liszt, Schumann, and selected works by Tausig, Moszkowski, Saint-Saens, Brahms, and Rubinstein.

The outline is necessarily quite elastic and will adjust itself to the individual ability, requirements, and purposes of each student.

## THE PIANO COURSE

## First Year

## First Semester

Musical Gymnastics  
Notation  
Scale Formations  
History of the Italian and  
French schools

## Second Semester

Etudes  
Introductory Technique  
Intervals and Triads  
History of the German School

## Second Year

## First Semester

Studies  
Elementary Harmony  
Melody Writing I  
Development of the Scandinavian  
School  
Development of Russian Music

## Second Semester

Preludes and Inventions  
Solo Pieces  
Melody Writing II  
Development of American Music

## Third Year

## First Semester

Octave and Chord Work  
Harmony { Seventh and Ninth  
          { Chords  
          { Cadences and Suspensions  
History  
Musical Appreciation

## Second Semester

Suites—Bach and Handel  
Sonatas  
Harmony—Organ Point and  
Modulation  
History  
Musical Appreciation

## Fourth Year

## First Semester

Preludes and Fugues  
Concerto, Fantasy  
Counterpoint  
Pedagogy

## Second Semester

Selected—Etudes, Studies,  
Sonatas  
Counterpoint  
Pedagogy

## COURSE IN PIPE ORGAN

The study of pipe organ is generally pursued by music students having at least Junior standing in piano. The Course is designed to provide a thorough education as choirmaster and organist, and provides for a training in all that pertains to intelligent performance of church music, voluntaries, and the art of accompaniment; also a systematic drill in technics, registration, and improvisation.

A new pipe organ for practice was installed during the summer of 1916.

### First Year

Stainer's Organ Method. Schneider's Organ Studies. Easy Hymn Tunes. Registration. Sight Reading. Easy pieces by Batiste, Flagler, Lemaigre, etc.

### Second Year

Dudley Buck's Short Preludes and Fugues, and Pedal Phrasing. Bach Chorales. Difficult hymn tunes. Organ solos of various styles by Rheinberg, DuBois, etc.

### Third Year

Sonatas by Merkel, Bach, and Mendelssohn. Preludes, Toccatas, Fugues. Quartet and chorus accompaniment. Selected solos by Guil-mant, Malling, etc.

### Fourth Year

(Each Senior Must Register for Full Course)

Sonatas by Guil-mant, Rebuke. Symphonies by Widor. Bach's Advanced Works. Chanting and solo accompaniment. Improvisation. Selected solos for concert use, by Frank, Widor, Lemare, Hollins, etc. Voice (two semesters).

It is very essential that an organist and choirmaster should understand the various voices he is to train, and for this reason we consider the voice requirement indispensable in the Organ Course.

A minor Course in Organ Construction will be required of graduate students in addition to the following theoretical courses:

Solfeggio and Dictation (two semesters).

Harmony (four semesters).

Harmonic Analysis (two semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

In order to give organ students a good presence in public appearance, all organ students will be required to appear in public and semi-public recitals once each month.

## COURSE IN VIOLIN

In the Violin Course, special attention is given to correct bowing, ear training and interpretation, a thorough acquisition, technically, and the study of a repertoire; with a few additions or changes to suit the individual requirements of the student, the general outline of the Course is as follows:

### First Year

Methods of Schubert, Wohlfart, Spohr, Belgian Violin School Book I, etc. Scales and bowing exercises to promote beauty of intonation. Easy pieces.

### Second Year

Schools by De Beriot, Mazas, and Kayser. First ten studies of Kreutzer. Belgian Violin School Book II.

### Third Year

Concertos by Viotti. Sonatas by Gade, Grieg, and others. Etudes by Kreutzer, Fiorillo, and Casorti. Belgian Violin School Book III.

### Fourth Year

Belgian Violin School Book IV. Rode Caprices and Concertos. Mendelssohn and Mozart. Concertos. Solos by the best composers for the violin are used throughout the Course to develop style and phrasing.

Opportunity is given for ensemble playing to those sufficiently advanced. One year of pianoforte study is required.

Theoretical courses required for graduation:

Solfeggio and Dictation (two semesters).

Harmony and Analysis (4 semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

## COURSE IN VIOLONCELLO

### First Year

Technical exercises. Major scales in two octaves. "Method Practique", by S. Lee. Studies by Dotzauer. Easy pieces.

### Second Year

Technical exercises by Cossmann. Scales in three and four octaves. Studies by Lee and Franchomme. Concertinos and pieces by Romberg.

**Third Year**

Technical exercises by Fitzhagen. Advanced studies by Grutzmacher. Concertos.

**Fourth Year**

Technical exercises by Klengel and Becker. Advanced studies. Sonatas by Bach.

Theoretical courses. See Violin Course.

**COURSE IN CONTRABASS****First Year**

Warnecke's Method of Playing. Scales and finger exercises. Etudes.

**Second Year**

Vorzuegliche Uebungen, Hause's. Etudes. Overtures. Symphonies.

**Third Year**

Warnecke's Method. Advanced Etudes. Beethoven Symphonies.

**Fourth Year**

Warnecke's Method. Part 2. Wagner Operas. Solos by Sturm and Laska.

Theoretical courses. See Violin Course.

**COURSE FOR THE VIOLA**

Bruni's Methods and Studies by Campagnoli.

**VOICE CULTURE**

Careful instruction is given in the use of the voice and the correct manner in producing purity of tone—the equalization of tone throughout the whole compass of the voice, and gain for it flexibility, fullness and durability.

**Tone Work.** Physiology, breath control, voice placing.

**Enunciation.** Attack, release, vibration, legato. (Vowels, diphthongs, and consonants).

**Sight Singing.** Staff notation, rhythm, ear training, harmony.

**Repertoire.** Interpretation and classification.

**Song, Oratorio, and Opera Coaching.** Pupils desiring to acquire the true rendition in oratorio solo singing, as exemplified in the interpretation of the great singers and conductors, can secure the necessary knowledge and thus equip themselves for public performances.

Ensemble singing, Duets, Trios, Quartets, and Choruses from Operas and Oratorios.

Studies from the works of old masters such as Palestrina, Orlando di Lasso, Gabrieli, Leo Hassler, etc.

Production of various opera scenes.

### **First Year**

Breath Control. First Vocalises of Concone. Diction. Slow, Easy Songs. Solfeggios.

### **Second Year**

Vocalises by Concone, Marchesi, Lamperti, and others. Diction. More advanced English songs. Simple Recitative. Simple Arias Solfeggios. Piano (one lesson weekly). Chorus. Advanced Vocalises, Song Interpretations. Velocity.

### **Third Year**

Advanced Vocalises. Song Interpretation. Velocity. Coloratura singing begun. Difficult Recitatives. Elaborate Arias. Solfeggios Advanced. Chorus.

### **Fourth Year**

Complete Oratorio Rôles. Complete Opera Rôles. Preparation of Concert Programs. Chorus.

Theoretical courses required for graduation. See Theory for Piano Course.

## **TEACHERS' COURSE IN PUBLIC SCHOOL MUSIC**

This Course provides in a systematic manner the best teaching methods, together with a thorough drill in sight reading, ear training and harmony; also gives actual practice in conducting the classes. In most of the public schools the regular grade teachers instruct the pupils under the supervision of a supervisor trained for the work. The purpose of this department is training for such supervision; by instructing pupils how to teach others to teach sight singing.

Outline of music used in the four-year Supervisor's Course:



### First Year

**Sight Singing.** This Course is elementary. The student must possess a singing voice of acceptable quality. Proficiency in sight singing is of great advantage to the student entering the Supervisor's Course.

To complete this course the student must use Latin syllables to sing at sight individually music suitable for the first four years in the public schools.

### Second Year

**Sight Singing.** The student is required to sing at sight with and without syllables, music suitable for the first seven years in the public schools.

### Third Year

**Sight Singing.** The student is required to sing at sight without accompaniment, reading words and music simultaneously, the music used in the upper grades of the public schools and in the high school.

### First Year

**Dictation.** (Sense of hearing based on the study of tone and rhythm). The student gains the power to think tones and to sense rhythms and learns to recognize and write simple melodic phrases in all keys.

Oral and written dictation work of the first four years in public school music, and singing from memory all sequential studies is required.

### Second Year

**Dictation.** Each student is required to complete the oral and written dictation, including all sequential studies.

### Third Year

**Dictation.** This course completes melodic dictation. Aural recognition of intervals and of chords in their fundamental and in their inverted positions in both major and minor tonalities is required in harmonic dictation.

### First and Second Years

**Materials and Methods.** The study and demonstration of materials and methods for kindergarten and the first four grades in public school music is considered. Selection, presentation, interpretation of rote songs for the lower grades, and the different tonal and rhythmic problems are taken up.

### Third Year

**Materials and Methods.** This Course is devoted to the teaching and supervising of music from fifth to eighth grades, inclusive.

### Fourth Year

**Materials and Methods.** The topics for consideration are: School chorus, glee clubs, grading and classification.

**Orchestral Technique.**

**Practice Teaching.**

Theoretical courses required for graduation:

Harmony and Analysis (four semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

### HARMONY

The fundamental principles of the theory of music are embodied in the study of harmony which treats of the different chords in their natural relations and combinations. The subdivisions of the subject are as follows: Intervals, or the measurement of the difference in pitch between one tone and another; triads, seventh and ninth chords with their inversions and resolutions; chromatically altered chords; augmented chords; cadences; suspensions; passing and changing notes; organ point, modulation.

The work consists of written exercises on basses (both figured and unfigured) and the harmonization of given melodies in three and four voices. These are corrected by the instructor out of the classroom and subsequently discussed with the students individually. Many exercises are also worked out on the blackboard by the students.

Modern Harmony, by Foote and Spalding, is used as the basis of the instruction. The Treatises of Prout, of Chadwick, and of others are used as reference books, and supplementary illustrations and explanations are given in the classroom. The course is as follows:

#### First Semester

Musical Notation, formation of Scales, both Major and Minor, intervals, triads, and chord connection. Simple part writing from given basses and sopranos; the chords of the seventh, with exercises harmonizing in open and close positions.

Modulation. Transposition of various models in all keys. Harmonizing melodies which modulate.

#### Second Semester

Chromatically altered chords, suspension, retardation, appoggiatura, passing tone, embellishment, pedal point.

No text-book required the first semester.

## CLASSES FOR ALL ORCHESTRAL INSTRUMENTS

Students who are sufficiently advanced in any of the above musical instruments will have opportunity of practice in string quartettes, trios, concertos, and symphonies of Beethoven, Mozart, and Haydn.

### RECITALS

Frequent recitals in the presence of the faculty and students of the School of Music and their friends are held to accustom students to playing in public, and for mutual improvement.

On the Friday evening prior to Commencement week a public recital of the School of Music is held in Bucknell Hall.

The public examination of those who desire certificates of proficiency is held in Bucknell Hall the Saturday afternoon before commencement. At this time each pupil plays or sings two pieces of high grade, and reads an essay on some subject connected with music.

### SPECIAL ADVANTAGES

Artists' Recitals. The opportunity of hearing good music rendered by artists of superior ability is very essential in connection with the classroom instruction. All students of the School of Music are urged to attend these concerts, as they are admitted without extra expense.

### TUITION

Tuition is charged for instruction in music, per semester, as follows:

	Full Course	Half Course	Quarter Course
Vocal .....	\$50.00	\$30.00	\$19.00
Piano or Organ .....	50.00	30.00	19.00
Violin .....	50.00	30.00	19.00
Supervisors' Course .....	50.00	30.00	19.00
Harmony, in private lessons .....	50.00	30.00	19.00
Harmony, in class .....	10.00		
Guitar and Mandolin, in class .....	10.00		
Use of Piano for practice (1 hr. daily) ..	5.00		
History, in class .....	10.00		
Use of Pipe Organ for practice (1 hr. daily)	15.00		
For instruction given by the Director and Heads of Voice and Piano De- partments .....	75.00	40.00	25.00

The regular charges for pupils residing in the Women's College will be as follows:

	Per Semester
Full Course in Music, (Theory classes included) .....	\$ 70.00
Use of piano for practice, (1 hour daily) .....	5.00
Board, room, heat, light, student budget, etc. ....	143.00

Special individual instruction in music, per lesson, \$2.00.

Full course implies two one-hour lessons per week, and theory.

Half course implies two half-hour lessons per week, and theory.

Quarter course implies one-half hour lesson per week, and theory.

No reduction is made except in case of protracted illness.

Instruction in the orchestra and in harmony is free to pupils otherwise studying music.

Payment strictly in advance beginning each semester.

### RESIDENCE OF MUSIC PUPILS

Pupils in music reside in the Women's College and are under the care of the Dean of the Women's College. Those who wish to make music a specialty are recommended to take at least one study each semester in Language or Literature.

The regular charges for pupils in music, residing in the Women's College are \$260 per annum. This **does not** include charges for instruction in music, which are determined by the number of lessons taken per week.

### GRADUATION IN MUSIC

Students who complete any of the Courses in Music and pass the examination, receive a certificate of proficiency. Students will not be taken as Fourth Year Pupils in Music until they have passed an examination before a committee consisting of members of the faculty and other appointed judges. Besides the examination before the Committee for admission to the Fourth Year, students will be required to pass a preliminary examination at the opening of the second semester, and a final examination before Commencement week. Students will not be admitted to the final examination unless they have passed the preliminary examination.

### THE AVIRAGNET PRIZE

Friends of the late Elysée Aviragnet have endowed a prize for excellence in Music. For 1920 this prize was given to Charles Evans.

### THE DIRECTOR'S PRIZE

The Director of the School of Music offers an annual prize for excellence in the Science of Music. For 1920 this prize was awarded to Mittie Mark.

### VOICE PRIZE

The Director, also, offers an annual prize for excellence in Voice. For 1920 this prize was awarded to Josephine Green.

### GENERAL REGULATIONS

Young women attending upon the School of Music are subject to the administration and other regulations enacted by the Board of Trustees for the government of students in the Women's College. Students of Music are also entitled to all the privileges of the Women's College.

# MUSIC

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## GRADUATE STUDENTS

Name	Course	Address
Merrill Brown DeWire	Voice	Lewisburg
Helen Gertrude Fisher	Piano	Lewisburg
Esther Marie Fleming	Violin	Paterson, N. J.
Mary Ellen Harris	Voice	Lewisburg
William Moyer	Voice	Lewisburg
Rachel Mary Reed	Piano, Pipe Organ, Voice	Maple Wood, N. J.

## FOURTH YEAR

Name	Course	Address
Norman Roy Appleton	Violin	Philadelphia
George Hobart Brown	Voice	Morristown, N. J.
Louise Frances Coombs	Piano	Philadelphia
Mabelle Ellyn DeSilva	Piano, Pipe Organ, Theory	Oxford
Homer Titus Eaton	Voice	Erie
Claire Gift	Voice, Piano	Milton
Marguerite Caroline Hartman	Voice	Danville
Cecil McKee Hazen	Supervisor, Piano Voice, Theory	Turtlepoint
Carolyn Julia Hunt	Voice	Lewisburg
Luther Paul Ilgen	Voice, Violin	Mifflinburg
Florence May Konopka	Pipe Organ, Theory Supervisor	Shamokin
Mittie Deborah Mark	Pipe Organ	Lewisburg
Verna Elizabeth Moyer	Voice	Lewisburg
Mary Cooper Rhoads	Piano, Pipe Organ Theory	Sunbury
Nelson Samuel Rounsley	Voice	Millerstown
Grover Short	Voice	Lebanon
Roy Russell Stine	Violin	Tyrone



## THIRD YEAR

Name	Course	Address
Edna Mary Baker	Piano, Theory	Lewisburg
Evelyn May Bennage	Piano, Theory	Milton
Constance Hunting Bennett	Piano	Glassboro, N. J.
Wesley Boyer	Voice	Lewisburg
Evelyn Brubaker	Piano	Mifflinburg
Helen Grace Brungard	Piano	Mifflinburg
Donald Cloward	Voice	Wilmington, Del.
Lois Margaret Cruse	Piano, Theory Pipe Organ	Picture Rocks
Louise Kurtz Glover	Piano	Mifflinburg
Louis Gene Griffiths	Voice	Scranton
Perilla Ravina Harner	Piano	Mount Carmel
Edward Fielding Heim	Voice	Lewisburg
Hilda Heller	Piano, Supervisor Theory, Voice	Forest City
Eloise Ernestine Hill	Violin	Williamsport
Belva Charlotte Holdren	Piano, Theory	Paxinos
Mary Elizabeth Kumer	Piano, Theory	Shamokin
Lawrence Winters Lawson	Voice	Latrobe
Jennie Leiby	Piano	Lewisburg
Margaret Morgan	Piano	Olyphant
Raymond Hall Miller	Pipe Organ, Piano, Theory	Salem, N. J.
James Frederick Moore	Piano	Milton
Viola Mae Showers	Piano, Voice Supervisor, Theory	New Columbia
Lois Smith	Piano	Milton
Margaret Jean Smith	Voice	Paterson, N. J.
Ada Pauline Thomas	Piano, Voice, Supervisor, Theory	Pleasantville, N. J.
Kathyrine Miller Wagner	Piano, Voice, Theory	Lewisburg

## SECOND YEAR

Name	Course	Address
Miriam Ayars	Piano	Millville, N. J.
Jennie Banks	Piano	Lewisburg
Mary Ethel Bailey	Piano	Latrobe
Eleanor Ballentine	Piano	Lewisburg
Isabelle Farrow Deibler	Voice	Shamokin

Name	Course	Address
Margaret DeWees	Piano	Montrose
Gladys Emrick	Piano	Shamokin
Joseph William Fetzer	Violin	Lewisburg
Grace Hartman	Piano	Herndon
Mildred Alice Hayden	Voice	Greensburg
Madge Odean Heimbach	Piano	Lewisburg
Phalia Isabelle Heintzelman	Piano, Theory	Lewistown
Martha Louise Hood	Voice	Saltsburg
Elizabeth Hurst	Pipe Organ	Norristown
Marshall Irvin	Piano	Lewisburg
William Lambert Joseph	Voice	Youngwood
Lawrence Myron Kimball	Voice	Vineland, N. J.
Kathleen Kleckner	Piano	Mifflinburg
Geraldine Grace Lagerman	Piano	New Columbia
Loveda Mae Lagerman	Piano	New Columbia
Dorothy Amelia Lent	Voice	Lewisburg
Elsie Leistner	Violin, Piano, Theory	Erie
Frieda Leistner	Violin, Piano, Theory	Erie
Florence Martz	Piano	Washingtonville
Carl Adam Metz	Voice	Scranton
Phyllis Miller	Piano	Milton
Catherine Elizabeth Mincemoyer	Piano, Theory	Montgomery
Helen Margaret Moore	Piano	Watson town
Natalie Elizabeth Musser	Piano	Lewisburg
J. W. Orndorf	Voice	Northumberland
Charles Levy Rissel	Piano	Pottsgrove
Mary Belle Ritter	Piano, Theory	Muncy
Beatrice Capwell Smith	Piano	Lewisburg
Nina Grace Smith	Pipe Organ	Dawson
Winifred Marie Smith	Piano	New Berlin
Hannah Edith Steely	Voice	Lewisburg
Frances Edith Van Cleaf	Violin	Stockholm, N. J.
Miriam Van Valzah	Piano	Lewisburg
Maude Wescott	Piano, Voice, Theory	Bridgeton, N. J.
Grace Woods	Piano	Milton
Fred Thomas Zimmerman	Piano, Violin	Philadelphia

## FIRST YEAR

Name		Address
Lena Annette Allebach	Violin	Watsontown
Margaret Elizabeth Allen	Piano	Watsontown
Matilda Elizabeth Bell	Piano	New Millport
Esther Rebecca Bucher	Violin	Watsontown
Evelyn Burpee	Piano	Lewisburg
Stanley Burpee	Piano	Lewisburg
Edward Colestock	Piano	Lewisburg
Mary Colestock	Piano	Lewisburg
Richard Colestock	Piano	Lewisburg
William Colestock	Piano	Lewisburg
William Courson	Voice	Wesleyville
Bertha Ella Cupp	Voice	South Williamsport
Pearl Spaid Custer	Voice, Theory	Milton
Darle Fae Davis	Violin	Allenwood
Ellis Garvin Diefenderfer	Voice	New Castle
Esther Virginia Dodson	Voice	Westmont, N. J.
Myra Catherine Effinger	Violin	Altoona
Iva Belle Foresman	Voice	New Columbia
Hattie Sophia Gamber	Voice	Lewisburg
Helen Rebecca Grove	Piano	Lewisburg
Mary Elizabeth Grove	Voice	Lewisburg
Miriam Herr Halderman	Voice	Malvern
Jennie Margaret Harrington	Piano	Sunbury
Anna Stewart Heysham	Voice	Morristown, N. J.
Madaline Snyder Houghton	Voice	Watsontown
Dorothy Irvin	Piano	Lewisburg
June Irvin	Piano	Lewisburg
Sara Kathryn Kauffman	Pipe Organ	Shamokin
Julia Agnes Kistler	Piano	Mifflinburg
Corinne MacNamara	Voice	Thompson
Grace March	Piano	Milton
Helen Esther McFarland	Violin	Watsontown
Estelle Fern McNeal	Violin	Sunbury
Rebecca Pearl Milliken	Piano	Lewisburg
Edna Estella Moyer	Piano	Lewisburg
Isabelle Gréselda Oldt	Voice	Winfield
Katherine Viola Persing	Piano	Allenwood
George Franklin Purpur	Violin	Sunbury
Grace Susan Reitz	Piano	Lewisburg
Louise Reinhart	Voice	Milton

Name	Course	Address
Phoebie Reinhart	Voice	Milton
J. A. Ruch	Voice	Northumberland
Margaret Hyde Russell	Piano	Bedford
Amorita Muriel Sesinger	Voice	Pitman, N. J.
Mary Stephens	Pipe Organ	Johnstown
Martha Geneva Thomas	Piano	Lewisburg
Benjamin Hockley Throop	Violin	Lewisburg
Helen Anna May Witmer	Piano	Lewisburg
Fae Pauline Zeigler	Voice	Herndon

## SUMMARY

Piano .....	74
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Sight Singing .....	20
Musical Appreciation .....	20

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Total Number of Lessons .....	455
Pupils .....	139

## GRADUATES, CLASS 1920

Name	Course	Address
Norman Roy Appleton	Voice	Philadelphia
Florence Edna Crabb	Piano	Winfield
Elthera Glen Corson	Voice	Bridgeton, N. J.
Merrill Brown Dewire	Voice	Lewisburg
Charles Edward Evans	Pipe Organ, Theory	Pottsville
Helen Gertrude Fisher	Piano	Lewisburg
Josephine Iva Green	Supervisor, Voice Theory	Olean, N. Y.
Mary Ellen Harris	Voice, Theory	Lewisburg
Mittie Deborah Mark	Supervisor, Theory	Lewisburg
William Moyer	Voice	Lewisburg
Stephen Fraley Puff	Voice	Philadelphia
Marion Riess	Piano	Mercedes, Texas
Julius Frederick Seebach	Voice	New Philadelphia, O.
Marguerite Edna Stevenson	Piano, Theory	Berwick
Russell Stout	Voice	Cedarville, W. Va.

## DESIRABLE GIFTS

To persons willing to make contributions for Christian education, the following are suggested:

- (a) Professorships can be endowed for \$60,000 each.
- (b) Fellowships can be endowed for \$10,000 each.
- (c) Scholarships can be endowed by a gift of \$1,000 to \$5,000 each.
- (d) Additions can be made to the Loan Fund which has been established. The interest from this is loaned to students, the principal being kept intact.
- (e) A fund for the Retirement of Professors, who have completed the natural period of active service.

Each of these forms of beneficence will bear and perpetuate the name of the donor or of the person designated by him.

## FORM OF BEQUEST

To persons desiring to aid in increasing the efficiency of the University in the work of preparing young men and young women for usefulness, the following form of bequest is recommended:

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of..... Dollars for general purposes, according to the Act of Assembly, incorporating the same.

### Or if for a Special Purpose:

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of ..... Dollars for the establishment of a professorship, fellowship, scholarship, loan fund, or retirement fund, to bear and perpetuate the name of ..... forever.



## ANNUITIES

Gifts will be accepted by the University upon which it agrees to pay an annuity during the life of the donor.

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# Bucknell University Bulletin



Annual Catalogue

1921-1922







CATALOGUE  
OF  
BUCKNELL UNIVERSITY



SEVENTY-SECOND YEAR  
1921-1922

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Bird's Eye View of the University

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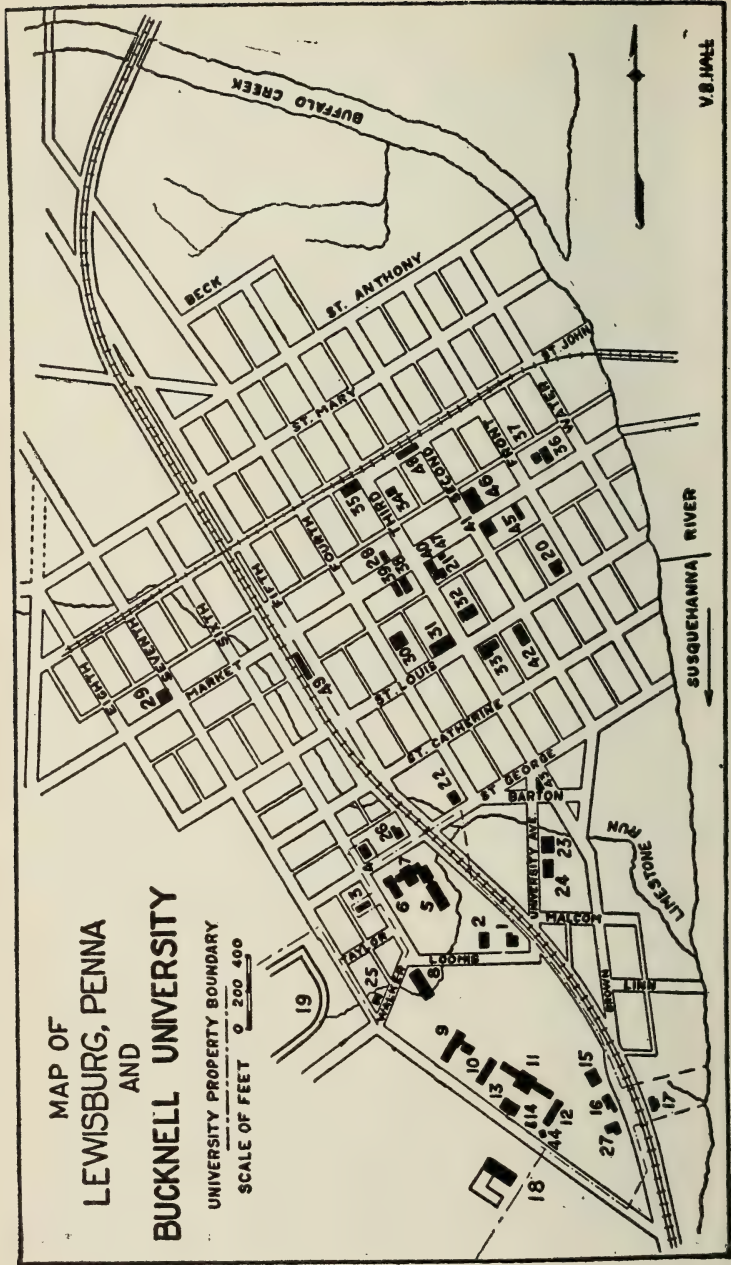
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# MAP OF LEWISBURG, PENNA AND BUCKNELL UNIVERSITY

UNIVERSITY PROPERTY BOUNDARY

SCALE OF FEET 0 200 400



## University Property

1. The President's Residence
2. Bucknell Hall
3. Bower House
4. Wolfe House
5. New Residence Hall
6. Bucknell Recitation Hall
7. Women's College
8. Chemical Laboratory
9. Biological Laboratory
10. West College
11. Main Building
12. East College
13. Carnegie Library
14. Observatory
15. Tustin Gymnasium
16. Power House
17. Foundry
18. Engineering Building
19. New Athletic Field

## Fraternities

20. Lambda Chi Alpha
21. Phi Kappa Psi
22. Sigma Alpha Epsilon
23. Kappa Sigma
24. Phi Gamma Delta
25. Sigma Chi

26. Delta Sigma
27. Kappa Delta Rho
28. Beta Kappa Psi
29. Phi Theta Sigma

## Churches

30. Evangelical
31. Baptist
32. Methodist Episcopal
33. Lutheran
34. Christian
35. Reformed
36. Presbyterian

37. Himmelreich Library
38. Post Office
39. Union National Bank
40. Lewisburg Trust and Safe Deposit Co.
41. Lewisburg National Bank
42. Court House
43. Soldiers and Sailors Monument.

44. College Inn
45. Delmar Inn
46. Cameron House
47. Steininger's Cafe

## Railway Stations

48. Pennsylvania R. R.
49. Reading R. R.



# GENERAL CALENDAR

1922 — 1923

1922

February

S	M	T	W	T	F	S
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>				

March

S	M	T	W	T	F	S
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	

April

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>						

May

S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>			

June

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	

September

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>						

October

S	M	T	W	T	F	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>
<b>29</b>	<b>30</b>	<b>31</b>				

November

S	M	T	W	T	F	S
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>		

December

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>	<b>31</b>					

1923

January

S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>			

February

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>			

March

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>	<b>31</b>					

April

S	M	T	W	T	F	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>
<b>29</b>	<b>30</b>					

May

S	M	T	W	T	F	S
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		

June

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>						

Dates printed in bold-faced type are those upon which the College is in session.

## 1922

January 4.....Wednesday-12:30 P. M.-Christmas recess ends  
 January 31.....Tuesday-Final examinations end  
 January 30-31.....Monday and Tuesday-Enrolment of all students  
 February 1.....Wednesday-8:00 A. M. - Second semester begins  
 February 22.....Wednesday-Holiday  
 April 12.....Wednesday-12:00 M.-Spring recess begins  
 April 19.....Wednesday-12:30 P. M.-Spring recess ends  
 May 30.....Tuesday-Holiday  
 June 9.....Friday - Final examinations end  
 June 11.....Sunday - Baccalaureate Sunday  
 June 13.....Tuesday - Alumni Day  
 June 14.....Wednesday - Annual Commencement

## SUMMER VACATION

September 11-12....Monday and Tuesday - Registration of new students and enrolment of all students  
 September 13.....Wednesday - 8:00 A. M. - First semester begins  
 November 1.....Wednesday - Last day for registration of graduate students  
 November 29.....Wednesday - 12 M. - Thanksgiving recess begins  
 December 4.....Monday - 12:30 P. M. - Thanksgiving recess ends  
 December 15.....Friday - 12 M. - Christmas recess begins

## 1923

January 3.....Wednesday - 12:30 P. M. - Christmas recess ends  
 January 31.....Wednesday - Final examinations end  
 January 30-31.....Tuesday and Wednesday - Enrolment of all students  
 February 1.....Thursday - 8:00 A. M. - Second semester begins  
 February 22.....Thursday - Holiday  
 March 28.....Wednesday - 12 M. - Spring recess begins  
 April 4.....Wednesday - 12:30 P. M. - Spring recess ends  
 May 30.....Wednesday - Holiday  
 June 8.....Friday - Final examinations end  
 June 10.....Sunday - Baccalaureate Sunday  
 June 12.....Tuesday - Alumni Day  
 June 13.....Wednesday - Annual Commencement

## SUMMER VACATION

September 17-18....Monday and Tuesday - Registration of new students and enrolment of all students  
 September 19.....Wednesday - 8:00 A. M. - First semester begins

## CORPORATE RIGHTS

The University was incorporated with full university powers by the Legislature of Pennsylvania in an Act approved by the Governor on the fifth day of February, 1846. The management of the University is committed to a Board of Trustees that is self-perpetuating. The Charter provides: "That said trustees shall not for any cause, or under any pretext whatever encumber by mortgage, or otherwise, the real estate or any other property of said institution: That no religious sentiments are to be accounted as a disability to hinder the election of an individual to any office among the teachers of the institution, or to debar persons from admittance as students, in any department of the University".

## ORGANIZATION

The University is composed of the College and of the School of Music.

## BENEFACTORS OF BUCKNELL UNIVERSITY

The total property of the Institution exceeds one million dollars. The productive endowment amounts to about six-hundred thousand dollars. All this property has been given by friends of education, numbering several thousand persons. Founders of the Institution, that is, Benefactors who have given ten thousand dollars or more have been: David Jayne, John Price Crozier, William Bucknell, Samuel Alrich Crozer, Harry Samuel Hopper, Harriet Bucknell Hopper, John D. Rockefeller, Catherine A. Wentz, Charles Miller, John J. Carter, Henry Kirke Porter, David Porter Leas, Andrew Carnegie, Louise Bucknell Little, Joseph Kerr Weaver, Franklin Mathews.

Patrons (those who have given one thousand dollars or more, but less than ten thousand) have been: Charles F. Ab-

bott, Ralph A. Amerman, E. A. Armstrong, Francis W. Ayer, Benjamin Bear, William P. Beaver, Martin Bell, Emma W. Bucknell, Washington Butcher, Simon Cameron, Levi B. Christ, Elisha A. Coray, William J. Coxey, Nettie Dunham Crary, Samuel J. Creswell, George K. Crozer, J. Lewis Crozer, Mrs. J. Lewis Crozer, Robert H. Crozer, John C. Davis, Thomas Y. England, Isaac Ford, Mrs. Isaac Ford, Benjamin Gartside, Mary W. Getter, Thomas A. Gill, Leroy Gleason, Calvin Green, Benjamin Griffith, Calvin A. Hare, John H. Harris, George Hyde, James Irving, Israel James, E. C. Jayne, Adam Johnston, John D. Johnson, William W. Keen, William B. Leas, Alexander M. Lloyd, Justin R. Loomis, Freeman Loomis, William H. Ludwig, J. C. McKinney, S. E. McVitty, Joseph Meixell, George Barron Miller, Geroge F. Miller, James Moore, James Moore, Jr., H. J. Mulford, Jacob G. Neafie, Christian Overholt, A. C. Overholt, Maria Overholt, George Porter, Jacob Reese, A. J. Rowland, J. C. Sibley, George M. Spratt, Orlando W. Spratt, W. H. Starbuck, Amos B. Still, James B. Stephenson, John B. Stetson, James S. Swartz, Francis J. Torrance, Ernest L. Tustin, N. Stewart Wall, Charles S. Walton, Martha England Walton, Thomas Wattson, Samuel Wolf, Simon P. Wolverton, S. D. Young, Roy G. Bostwick, John T. Judd, Anna L. Reilly, S. Lewis Ziegler, Rush H. Kress, Harold N. Cole, Henry L. Fonda.

By act of the Board of Trustees, the names of Founders and Patrons will be recorded in the Annual Catalogue of the University forever.

## A MOVEMENT TO INCREASE FUNDS

The Board of Trustees is engaged in a movement which is intended to add a million dollars to the endowment and to secure a half million for additional equipment.

## THE BOARD OF TRUSTEES

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JAMES S. SWARTZ, A.M., Chairman 11 Broadway, New York City

\*ERNEST L. TUSTIN, LL. D., Vice-Chairman,  
1420 Chestnut St., Philadelphia

OLIVER J. DECKER, A. B., Secretary,  
Williamsport

JOHN T. JUDD, D.D., Treasurer, Lewisburg

RALPH A. AMERMAN	Scranton
ROY G. BOSTWICK, A.M., LL.B.	Pittsburgh
JOHN WARREN DAVIS, LL.D.,	Trenton, N. J.
MILTON G. EVANS, D.D., LL.D.	Chester
JOHN H. HARRIS, Ph.D., LL.D.	Lewisburg
H. BOARDMAN HOPPER	Philadelphia
LINCOLN HULLEY, Ph.D., LL.D.	Deland, Florida
JOHN D. JOHNSON	Philadelphia
ALBERT W. JOHNSON, A.B.	Lewisburg
RUSH H. KRESS, Ph.B.	New York City
JOHN H. MACALPINE	Pittsburgh
CHARLES MILLER, A.M.	Franklin
FRANK W. PADELFORD, D.D.	New York City
LOUIS W. ROBEY	Philadelphia
LEROY STEPHENS, D.D.	Lewisburg
CHARLES P. VAUGHAN	Philadelphia
*JOSEPH K. WEAVER, A. M., M. D.	Norristown
CLARENCE A. WEYMOUTH, Sc.B.	Philadelphia
S. LEWIS ZIEGLER, M.D., LL.D.	Philadelphia

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\*Deceased.

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## MEETINGS OF THE BOARD

The annual meeting is held on Tuesday of Commencement Week at Lewisburg.

The semi-annual meeting is held in Philadelphia at a date chosen by the Board.

## COMMITTEES OF THE BOARD

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### COMMITTEE ON INSTRUCTION

Ernest L. Tustin, Chairman

R. A. Amerman	Lincoln Hulley
J. W. Davis	F. W. Padelford
M. G. Evans	Leroy Stephens
E. W. Hunt, ex-officio	

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### COMMITTEE ON FINANCE

H. B. Hopper, Chairman

J. W. Davis	E. L. Tustin
Rush H. Kress	C. P. Vaughan
L. W. Robey	C. A. Weymouth
J. K. Weaver	
E. W. Hunt, ex-officio	

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### COMMITTEE ON BUILDINGS AND GROUNDS

J. T. Judd, Chairman

O. J. Decker	Charles Miller
A. W. Johnson	S. L. Ziegler
E. W. Hunt, ex-officio	

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### COMMITTEE ON PUBLICATIONS

Leroy Stephens, Chairman

M. G. Evans	R. G. Bostwick
E. W. Hunt, ex-officio	



**PRESIDENTS OF THE UNIVERSITY**

1846-1851 STEPHEN W. TAYLOR, LL.D.

1851-1857 HOWARD MALCOM, D.D., LL.D.

1858-1879 JUSTIN ROLPH LOOMIS, Ph.D., LL.D.

1879-1888 DAVID JAYNE HILL, LL.D.

1889-1919 JOHN HOWARD HARRIS, Ph.D., LL.D.

1919- EMORY WILLIAM HUNT, D.D., LL.D.

# BUILDINGS AND EQUIPMENT

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## THE MAIN COLLEGE

The Main College is situated on a hill one hundred feet above the Susquehanna River. It was erected in 1859. It was designed by Thomas U. Walter, LL.D., architect of the dome and wings of the Capitol at Washington, D. C. It is Grecian in style. The building has a facade of three hundred and twenty feet. The central portion is eighty feet square, and is strengthened in front by four massive columns. On the first floor are six recitation rooms. On the second floor are the Museum of Natural History and recitation rooms.

On the third floor is Commencement Hall, with a seating capacity of fifteen hundred.

The Wings on the eastern and western sides, respectively, of the Main Building, are each one hundred and twenty feet in length and four stories in height. They are used for dormitory rooms, recitation rooms, and offices. The dormitory rooms have been thoroughly modernized. The West Wing was erected in 1850; the East Wing in 1859.

## THE WEST COLLEGE

The West College was erected in 1900. It is four stories in height, and is built of brick trimmed with brownstone. It contains ninety-seven rooms. One of the rooms is a hall for the use of the Young Men's Christian Association; the others are used for dormitory rooms.

## THE EAST COLLEGE

The East College was erected in 1907. It is built of brick, trimmed with brownstone. The first story contains the Electrical Laboratory, the Physical Laboratory and reci-

tation rooms. The top floor is used for draughting rooms. The other four stories contain one hundred and twelve dormitory rooms.

### THE FIRST BUILDING

The First Building on College Hill was erected in 1846. It is fifty feet in width by eighty feet in length, and three stories in height. The building will be used as a Laboratory of Biology.

### BUCKNELL RECITATION HALL

The Bucknell Recitation Hall was erected in 1889. It is contiguous to the First Building and is connected with it by a covered passageway. This building contains both recitation rooms and laboratories.

### BUCKNELL HALL

Bucknell Hall was erected in 1886. It is the Chapel of the College.

### THE CARNEGIE LIBRARY

The Carnegie Library was given by the Honorable Andrew Carnegie, D.C.L., in the year 1905. The building is sixty-four feet by ninety feet. It is built of brick, trimmed with brownstone. The center, thirty feet by ninety, is used as a reading room. At the height of sixteen feet there is a gallery extending around the room. The sides, each fifteen feet by ninety, are divided, on the first floor, into rooms for special collections and for offices. The second floor will be used for stack rooms. The building will accommodate about one hundred thousand volumes.

### THE OBSERVATORY

The Observatory was erected in 1887 and enlarged in 1905. It is designed for the use of students in Practical Astronomy. The equipment consists of a Clark Equatorial

Telescope of ten inches aperture and  $12\frac{1}{2}$  feet focal length, furnished with a position Micrometer and the usual accessories; a Spectroscope, with prism and grating by Brashear; a three-inch prismatic Transit, with a nine-wire movable Micrometer, a Fauth Chronograph with Bond Spring Governor; a Waldo Precision Clock for siderial time, with mercurial compensation, break circuiting apparatus; Daniell's battery and telegraph sounders; a Seth Thomas Clock for solar time; a Sextant; Celestial globes and maps, and standard works on Theoretical and Practical Astronomy.

### THE CHEMICAL LABORATORY

The Chemical Laboratory has been greatly improved both in usefulness and appearance by an addition of forty-five feet to its length.

On the ground floor there are the chemical preparations, agricultural, metallurgical, and organic laboratories; combustion room, stock room, and a dark room.

On the first floor there are the lecture hall, at the south end of the building, with seating capacity for one hundred and ten, and two freshmen laboratories, each fitted to accommodate ninety-six students.

On the second floor there are the physical, the quantitative, the organic, and the home economics laboratories; a recitation room, balance room, library and two offices. The building is ventilated according to modern methods.

### ENGINEERING BUILDING

The Engineering Building, when completed, will be in the shape of a hollow square having a frontage of 192 feet and a depth of 134 feet, and containing about 58,000 square feet of floor space.

The first wing to be built is primarily for the use of the Mechanical Engineering Department and will be ready by September 1922.

On the ground floor there are a well-equipped model power plant, complete in every respect, consisting of a 100 H. P. water tube, oil burning, high pressure boiler, with all auxiliaries necessary for full operation; steam engines, a turbo generator set, condensing outfit, pumps and other apparatus for carrying on the experiments usually taught in Steam Engineering; a laboratory for carrying on work in the field of automotive and internal combustion engines and a special laboratory for performing experiments in hydraulics and cement testing.

On the first floor there are the pattern shop, machine shop, tool room, and one recitation room.

On the second floor there are two good-sized recitation rooms, two large drawing rooms, a lecture room and an office for general use of the teachers engaged in the Department of Mechanical Engineering.

### **THE FOUNDRY**

The Foundry was erected in 1915. It is built of brick and is fitted up with appliances requisite for the courses in molding and casting.

### **HEATING AND LIGHTING PLANT**

The Heating and Lighting Plant was erected in 1901. From this central plant all heat, light and power used by the University are obtained.

### **THE PRESIDENT'S HOUSE**

At the entrance to the Campus from University Avenue is located the President's house.

### **THE GROFF HOUSE**

The Groff house, with the adjoining land, formerly the property of Professor George G. Groff, is now the property of the University.

## THE TUSTIN GYMNASIUM

The Tustin Gymnasium was erected in 1890. The first story is built of stone and contains an office for the director, lockers, dressing rooms, and shower baths. The second story is built of brick, rising twenty-two feet from the main floor to the roof line. At the height of twelve feet a running-track gallery, six feet wide, surrounds the room.

## THE ATHLETIC FIELD

The Athletic Field is conveniently located at the foot of "College Hill". Around the space devoted to football and baseball, runs a quarter-mile track. Close to the track on the southern side is the Tustin Gymnasium, easily accessible to students and trainers.

## BUILDINGS OF THE WOMEN'S COLLEGE

The buildings and campus of this department are set apart for the use of women taking courses in the College and in the School of Music.

The Main Building was erected in 1857; the South Wing, in 1870. It contains an office for the Dean, a reception room, parlors, living-room, dining-hall, and dormitory rooms. On the third floor of this building is the Laboratory for the department of Home Economics.

The Bucknell Cottage was erected in 1889. It stands to the southwest of the Main Building, and is connected with it by an enclosed passageway. It is used as a dormitory for women.

A new residence hall for women was erected in 1905. The gymnasium occupies the upper story of this building, and has a floor surface of over four thousand feet.



Two additional residence buildings adjoining the campus have recently been secured. Each of these accommodates about twenty college women.

The Campus of the Women's College is separated from the main College grounds by Loomis Street.

## LABORATORIES

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### The Biological Laboratories

The Biological Laboratories are equipped with apparatus for carrying on the work in the Organic Sciences. Rooms have been equipped for the various courses and are well supplied with microscopes, microtomes, incubators, and the necessary reagents. The laboratories are also supplied with collecting apparatus, books of reference and other necessary appliances. New apparatus is added as occasion demands. The work in Zoology is illustrated by marine and fresh water forms, skeletons and mounted specimens. An anatomical museum of dissections has been built up in the last few years by the department of Zoology.

The Physiological Laboratory has recently been equipped with stimulating apparatus, kymographs, heart and muscle levers, spirometers, pneumographs, ergographs and other apparatus suitable for a well-rounded laboratory course in beginning or advanced work.

Material for Human Anatomy is received from the State Anatomical Board, and each student has the opportunity to dissect the human body. The student in Microscopic Anatomy has a good supply of paraffin and celloidin blocks. The work is illustrated with microscopic slides, alcoholic material and French wax models. Each student must provide himself with dissecting instruments.

During the past year a large Bacteriology Laboratory, and a room for the preparation and sterilization of media, have been furnished. The new equipment installed in these laboratories includes: an autoclave, Arnold sterilizers, an electric instrument sterilizer, Lautenschlaeger hot air sterilizers, constant temperature water baths, constant temperature electric incubators, a high power International electric centrifuge, a shaking machine for preparation of bacterial

emulsions, a Jewell type automatic water still, blast lamps, etc. Each laboratory is supplied with running hot and cold water, and with gas and electric service.

### **The Electrical Laboratory**

The Electrical Laboratory is located on the ground floor of East College and consists of the dynamo laboratory proper, and the instrument room for the safe keeping of portable and precision apparatus. The lecture and demonstration room adjoins the laboratory. These combined rooms furnish a total floor space of approximately 2,600 square feet and contain the apparatus for the laboratory work of the various courses in electrical engineering.

The direct current apparatus includes several direct current motor equipped generating sets; shunt, compound, and series motors with prony brake for testing purposes, and numerous other special devices for engineering and commercial tests. A 25 KW engine driven direct current generator is available for power plant efficiency tests and other experimental work. This apparatus is so chosen and erected as to make a detailed study complete and convenient.

The alternating current apparatus consists of various types of single phase, two phase, and three phase generators, single and polyphase induction motors, rotary converter, synchronous motors, and all necessary measuring instruments for performing engineering and commercial tests. Apparatus used is of frequencies varying from 25 cycles to 500 cycles.

The high tension equipment includes all the transformers, most of which are of the commercial type, others are special in their design and construction, and were built by the students in the department. The equipment also includes a Tesla coil with a thirty-six inch spark. This was built by the students of the department and operates with

remarkable success. A complete oscillograph equipment with all the necessary accessories for the study of phase relations and higher harmonics in alternating current circuits forms a very valuable adjunct to the laboratory equipment.

The apparatus for the work in telegraphy and telephony comprises the essentials for simple telegraph circuits, duplex, diplex and quadruplex telegraphy including relays and repeaters. Simple magneto apparatus and several standard types of common battery apparatus are available for study in telephony.

A standard 1 KW radio set with 225-foot aerial, having a transmitting radius of 100 to 1,000 miles, depending upon conditions, furnishes an excellent equipment for students in this line of work. This is also equipped with various forms of receiving devices, and a wave meter for studying the wave lengths of distant stations.

### **The Chemical Laboratory**

The Chemical Laboratory building is used exclusively by the Department of Chemistry and Chemical Engineering. It is equipped with apparatus and laboratories suitable to the courses offered.

### **The Physical Laboratory**

The Physical Laboratory occupies the West side and, jointly with the department of Electrical Engineering, the South end of the East College. The three rooms on the West side are devoted chiefly to the study of mechanics, heat, light, and sound. They are fully equipped with permanent shelves and piers for carrying delicate apparatus, and also many portable tables for general purposes. They are well lighted and supplied with water, gas, and electricity.

The equipment of the mechanics laboratory includes certified standards for measuring time, length and mass, and

includes a seconds pendulum, a standard meter, cathetometers, traveling microscopes, precision balances and weights.

For the study of heat, the apparatus includes a complete set of mercury-in-glass thermometers, air thermometers, platinum resistance thermometers and auxiliary apparatus, thermo-couples, calorimeters for the determination of the heat value of solid, liquid and gaseous fuels. Several types of apparatus are available for the determination of the Mechanical Equivalent of heat.

The light laboratory is equipped with a large number of lenses and mirrors, spectrometers and spectroscopes, including one by Brashear fitted with a Rowland grating of 14,438 lines to the inch, and a constant deviation type by Hilger with photographic attachment. The equipment is complete for the qualitative study of the spectra of solids, liquids, and gases. Several optical benches are fitted with different types of photometers, and one precision photometer, carrying a Lummer-Brodhun screen, is mounted for the study of electric lamps.

The electrical equipment includes a large number of galvanometers of the various types; standard cells; standards of resistance, capacity and inductance; several types of the Wheatstone bridge; the Carey-Foster bridge; Kelvin Double bridge; Kelvin Balance; Siemens Dynamometer; a large number of the Weston portable voltmeters and ammeters; several types of potentiometers from American and foreign makers. In connection with the Electrical Engineering department, much apparatus is available which is described under the equipment of that laboratory.

### **Home Economics Laboratory**

The Home Economics Laboratory is located on the third floor of the Main Building at the Women's College.



The cooking laboratory is equipped for twenty-four students. A dining-room and kitchen are suitably furnished and used in connection with the planning and serving of meals.

The sewing room is on the second floor of the Bucknell Cottage. It is provided with sewing machines and other necessary equipment for the teaching of sewing.

### THE DRAWING ROOMS

The upper floor of the East College is devoted to Drawing. The rooms are lighted by sky-lights, and are fitted with locker and desk space for one hundred students. The center room is used for the Freshmen Drawing, the South room for Sophomore Drawing, the North room for Senior work in the Electrical Engineering course. The advanced drawing rooms for Civil and Mechanical Engineers are on the first floor of East College and the first floor of East Wing.

The drawing department is provided with a dark room for blue printing which has an electric printing machine, and is equipped for washing and drying the prints.

### THE MUSEUM

The University possesses good collections of illustrative material in Botany, Zoology, Histology, Geology and Mineralogy. Parts of these collections are kept in the laboratories and used in classroom work.

Since the erection of the Carnegie Library two large rooms in this building have been set aside as a Biological Museum. The collections of mounted birds and mammals have been transferred to these rooms. A special effort is being made to secure additions to this museum. Skeletons of vertebrates and skins of birds and mammals are especially desired.

The Geological Museum has been greatly enlarged during the past ten years, and many valuable specimens have been added.



During the past twenty-five years there has been built up a remarkable collection of Indian Relics. The collection includes some of the finest specimens from the Murray Nesbit collection, also the Gerner Collection from Muncy, Pa., besides thousands of specimens collected along the West Branch of the Susquehanna between Sunbury and Williamsport.

### THE LIBRARY

The general Library contains over forty thousand volumes, besides many thousand pamphlets. The Reading Room is connected with the Library and offers facilities for reading, studying, and writing. During term time both are open forenoon, afternoon and evening of each day, Sundays and holidays excepted. By the kindness of the Class of 1917, the Library is well lighted with electricity. Students in all departments have free access to the shelves, and may draw two books at one time and retain them for two weeks, with the privilege of one renewal, if desired. On special designation by instructors, certain books in constant use by classes are excepted from general circulation, during specified times, or during the continuance of the study.

For greater convenience of instructors and students, collections of special technical books are also kept in the Laboratories of the Biological, Physical and Organic Sciences, in the Astronomical Observatory, and in specially designated classrooms.

### ART COLLECTION

An Art Collection of paintings, engravings, heliotypes, photographs, bronzes and casts of sculpture has been accumulating for some time, and is accommodated in the Carnegie Library. Recent valuable additions include the Loomis Collection, gathered in Italy by the late President Justin Rolph Loomis, LL.D., the gift of his children, Andrew Gregg Loomis, Esq., and Mrs. Carrie Loomis Owens.

**Bucknell University**

**The College**



# THE COLLEGE

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## OFFICERS OF ADMINISTRATION

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EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
President Emeritus

LLEWELLYN PHILLIPS, D.D.  
Dean

ANNA ROBERTA CAREY, A.M.  
Dean of Women

CHARLES ARTHUR LINDEMANN, A.M.  
Secretary of the Faculty

THERON CLARK, A. B.  
Registrar

MARY HELEN HUNT, A.B.  
Recorder and Secretary to the President

FRANK EUGENE BURPEE, A.M.  
Superintendent of Buildings and Grounds

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## FACULTY

---

EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
Professor of Philosophy

WILLIAM CYRUS BARTOL, A.M., Ph.D.  
Professor of Mathematics and Astronomy

FRANK ERNEST ROCKWOOD, A.M., LL.D., D.C.L.  
Professor Emeritus of the Latin Language and Literature

WILLIAM GUNDY OWENS, A.M.

Professor of Chemistry

THOMAS FRANKLIN HAMBLIN, AM., LL.D.

New Jersey Professor of the Greek Language and Literature

WILLIAM EMMET MARTIN, A.M., L.H.D.

Professor of Logic and Sociology

NELSON FITHIAN DAVIS, Sc.D.

Professor of Biology

EPHRAIM M. HEIM, A.M., Ph.D.

Professor of Economics and Political Science

LLEWELLYN PHILLIPS, A.M., D.D.

John P. Crozer Professor of Education

HENRY THOMAS COLESTOCK, A.M., Ph.D.

Professor of History

CHARLES ARTHUR LINDEMANN, A.M.

Professor of Civil Engineering

FRANK MORTON SIMPSON, Sc.M.

Professor of Physics

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Professor of Electrical Engineering

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Professor of the Latin Language and Literature

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Professor of Mechanical Engineering

MARTIN LINNAEUS DRUM, A.M.

Professor of Surveying

NORMAN HAMILTON STEWART, A.B., Sc.M.

Professor of Biology

BENJAMIN W. GRIFFITH, A.M.

Professor of Romance Languages

GLENN VINTON BROWN, Ph.D.

Professor of Chemical Engineering

PAUL GEORGE STOLZ, A.M.

Professor of Music

ANNA ROBERTA CAREY, A.M.

Professor of Home Economics

LEO LAWRENCE ROCKWELL, A.M.

Professor of German and English

GEORGE FRED RASSWEILER, A. M., B. D., B. O.

Professor of Public Speaking

AMOS LEE HEROLD, A.M.

Professor of English Literature

OREL SAMUEL GRONER, A.B., Sc.M.

Associate Professor of Chemistry

OWEN GRIFFITH GROVES, A.M.

Associate Professor of English

HARRY SCHEIDY EVERETT, A.M., Sc.M.

Assistant Professor of Mathematics

WILLIAM HILLIARD SCHUYLER, B.S. in Ch.E.

Assistant Professor of Chemistry

JOHN WILLIAM RICE, Sc.M.

Assistant Professor of Biology

GENEVIEVE BOLAND, A.M., Ph. D.

Assistant Professor of Romance Languages

ROY FRANCIS HOWES, A.M., LL.B.

Assistant Professor of Economics and Political Science

ARTHUR ST. CLAIR SLOAN, A.M.

Assistant Professor of Romance Languages

DAVID MOYER

Assistant Professor of Music

VORIS BLAINE HALL, Sc.M. in E.E.

Instructor in Physics

VERA COBER ROCKWELL, A.B.

Instructor in Spanish

JOHN STEINER GOLD, B.S., A.M.

Instructor in Mathematics



GEORGE ALLISON IRLAND, B.S. in E.E.  
Instructor in Electrical Engineering and Drawing

GEORGE LOXLEY LOWRY, B.S., A.M.  
Instructor in Mathematics

GEORGE MERRILL KUNKLE, Sc.M. in M.E.  
Instructor in Mechanical Engineering

BENJAMIN JAMES WILSON, B.S. in M.E.  
Instructor in Mechanical Engineering

HARRY REDCAY WARFEL, A.B.  
Instructor in English

HAROLD AUGUSTUS SHAFFER, A.B., B.S. in E.E.  
Instructor in Electrical Engineering and Drawing

ANNIE COCKS CLARK, Ph.B.  
Instructor in Mathematics

MARION BRIGGS DAVIS, Sc.M.  
Instructor in Biology

OLIVE DOUGLASS, B.S. in H.E.  
Instructor in Dietetics

SARA KISTLER BROWN, B.S.  
Instructor in Chemistry

NOVELLO JONES, B.S. in H.E.  
Instructor in Household Arts

HAROLD MILLER, Sc.M.  
Assistant in Biology

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## COMMITTEES OF THE FACULTY

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### ADVANCED DEGREES

Professor Davis, Chairman  
Professors Ballentine, Drum, Griffith and Rhodes

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### ADVANCED STANDING

Professor Drum, Chairman  
Professor Owens and Assistant Professors Everett and Sloan

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### ADMISSION AND REGISTRATION

Professor Rhodes, Chairman  
Professors Colestock, Drum, Hamblin, Owens, Rockwell and  
Assistant Professors Boland and Everett

**ATTENDANCE AND STANDING**

Professor Simpson, Chairman

Professors Brown, Griffith, Heim, Lindemann, Martin, Stewart and  
Associate Professor Groner

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**CATALOGUE**

Dean Phillips, Chairman

Dean Carey, Professors Ballentine, Rhodes, Simpson, Associate Professor Groves, and the Registrar

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**CHAPEL**

Assistant Professor Rice, Chairman

Professors Stoltz, Rassweiler and Assistant Professor Schuyler

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**CURRICULUM AND COURSES**

Dean Phillips, Chairman

Dean Carey, Professors Ballentine, Bartol, Burpee, Davis,  
Herold and Assistant Professor Howes

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**HONORARY DEGREES**

Professor Hamblin, Chairman

Professor Martin and Dean Phillips

---

**LIBRARY**

Professor Martin, Chairman

Professors Colestock, Rhodes and Stewart

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**STUDENT ACTIVITIES**

Professor Drum, Chairman

Dean Carey, Professors Rhodes, Stewart, Stolz and Rassweiler

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**OTHER OFFICERS**

NELSON FITHIAN DAVIS, Sc.D

Curator of the Museum

CLARENCE EDWIN GLASS, Ph.B.  
Director of Physical Education for Men  
Graduate Manager of Athletics

MARY STONER GRETZINGER  
Curator of the Library

WILLIAM EMMET MARTIN, A.M., L.H.D.  
Librarian

LEO LAWRENCE ROCKWELL, A.M.  
Editor of Alumni Monthly

CLARA GOBLE SALE  
Managing Dietitian

ELIZA JOHNSTON MARTIN, Sc.M.  
Assistant Librarian

PAUL GEORGE STOLZ, A.M.  
Director of the School of Music

VIRGINIA WALTON, A.B.  
Director of Physical Education for Women

G. NORMAN WILKINSON, B.S.  
Taxidermist

# ADMISSION TO THE COLLEGE

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All applicants for admission should secure application blanks from the Registrar.

## Requirements

The requirement for admission is fifteen units of secondary school work. No student is admitted with less than thirteen units. A unit is a course of study pursued for a year, at least four periods a week of forty minutes each.

## Required Subjects

	Units
English .....	3
Algebra .....	1½
Geometry, Plane .....	1
Geometry, Solid ( For entrance to course in Biology, Chemical Engineering, Civil Engineering, Electrical Engineering and Mechanical Engineering) .....	½
Social Science, including History..	2
Natural Science .....	1
French, at least .....	2 or
German, at least .....	2 or
Greek, at least .....	2 or
Latin, at least .....	2 or
Spanish, at least .....	2

The remaining four or four and one-half units may consist of further work in the above subjects or other subjects in the courses of study in a high school of the first class.

### **Certificates**

Applications for admission who present approved certificates which represent the required and elective subjects named above will be admitted without further examination.

### **Examination**

Applicants for admission who do not present certificates are admitted by examination. This examination may be arranged for by writing to the Registrar of the University.

### **Advanced Standing**

A student applying for admission to advanced standing must present to the Registrar of the University the following papers duly signed by the Registrar of the institution from which he comes:

1. A detailed statement showing terms, hours and grades for all work accepted for admission at that institution and all the work completed there.
2. A letter of honorable dismissal.

A Normal School graduate, who is also a graduate of a four-year high school, may be given credit for not more than one year of college work. The standing of a student is determined by the Committee on Advanced Standing. The decision is made only after the student has done sufficient work at Bucknell University to give evidence of the quality of the credits presented. No student will be admitted to the college as a candidate for a degree in the undergraduate courses after the beginning of the Senior Year.

### **Special Requirement in English**

Attention is called to the following regulation concerning English:

Students will be registered for the regular freshman rhetoric course only conditionally. Those found by a practical test in the writing of simple English to be notably deficient in spelling, punctuation, grammar and paragraphing will be assigned to a special sub-freshman course. For this work no college credit will be allowed. Students, however, who show satisfactory improvement will be transferred to the regular college sections, in October, December, and February.

# GRADUATION FROM THE COLLEGE

## Degrees

The college offers courses leading to the degrees of Bachelor of Arts and Bachelor of Science.

### Requirements for the Degree of Bachelor of Arts

#### I. Prescribed Work

Candidates for the degree of Bachelor of Arts must pursue the following courses:

	Credit Hours
English Composition.....	9
English Literature .....	3
Foreign Language .....	6
History .....	6
Mathematics 1, 2, 6 .....	8
Philosophy .....	9
Physical Education .....	4
Public Speaking .....	4
Science.....	6
Fundamentals .....	1

By a credit hour is meant one recitation a week throughout a semester; two or three hours of laboratory work a week may be required for one credit hour. As a rule, a student may expect to spend three hours of time (including the class hour) for one hour of credit.

#### II. Majors and Minors

Subjects are arranged according to the following groups and divisions:

##### Group I

English

German

Greek and Latin

Romance Languages



## Group II

Bible

History and Political Science

Economics, and Sociology.

Philosophy and Education

## Group III

Biology

Chemistry

Mathematics

Physics

All students who are candidates for the degree of Bachelor of Arts are required to complete a Major and two Minors. A Major consists of six semester courses or eighteen semester hours in one division of a group; a Minor consists of three semester courses or nine semester hours in one division of a group. Neither a prescribed course nor a course of the Freshman or the Sophomore Year shall be counted toward a Major or a Minor.

The Minors, except by permission of the Dean, must be outside of the Group in which the Major is contained.

The choice of the Major and the Minors must be registered before or during the second semester of the Sophomore Year and with the advice and the approval of the Dean and of the Professor or Professors in charge.

## III. Credits

Each candidate for the degree of Bachelor of Arts is required to present at least one hundred and twenty-eight credit hours, not including physical education.

# IV. Conspectus of the Course of Study Leading to the A.B. Degree

## FRESHMAN YEAR

L. stands for laboratory hours.

Cr. stands for credit hours.

First Semester	L.	Cr.	Second Semester	L.	Cr.
Prescribed:			Prescribed:		
English Composition 1		3	English Composition 2		3
Fundamentals 1		1	History 2		3
History 1		3	Mathematics 2		2
Mathematics 1		4	Mathematics 6		2
Physical Education	3		Physical Education	3	
Public Speaking 1 or		2	Public Speaking 6 or		2
Public Speaking 3		2	Public Speaking 8		2
Electives:			Electives:		
French		3	French		3
German		3	German		3
Greek		3	Greek		3
Latin		3	Latin		3
Science			Mathematics 4		3
Biology 25 (Botany) or		5	Mathematics 10		2
Chemistry 1 or		3	Science		
Physics 1		3	Biology 26 (Botany) or		5
Spanish		3	Chemistry 2 or		3
			Physics 2		3
			Spanish		3

## SOPHOMORE YEAR

First Semester	Cr.	Second Semester	Cr.
Prescribed:		Prescribed:	
English Literature 1	3	English Composition 4	3
Electives:		Electives:	
Economics 1	3	Economics 2	3
French	3	French	3
German	3	German	3
Greek	3	Greek	3
Greek 9 (Greek Civilization)	3	Latin	3
Latin	3	Latin 10 (Roman Civilization)	3
Mathematics 11	3	Logic	3
Public Speaking		Mathematics 10	2
Science		Mathematics 12	3
Biology 1 or	5	Public Speaking	
Biology 25 (Botany) or	5	Science	
Chemistry or	3	Biology 2 or	5
Physics	3	Biology 26 (Botany) or	5
Spanish	3	Chemistry or	3
		Physics	3
		Spanish	3

## JUNIOR YEAR

## SENIOR YEAR

	Cr.		Cr.
Philosophy 1, 6, 8	9	Major	9
Major	9	Minors	9
Minors	9	Electives	14
Electives	5		

## V. Regulations

1. Sixteen credit hours are required in each semester. A student who has obtained an average of "A" in a semester may take more than sixteen hours in the following semester. No student may register for more than nineteen hours in a semester.

2. A total of four years' work (including preparatory work) in foreign language is required for graduation. Even if four years of foreign language are accepted for entrance a minimum of one year will be required in college. A student who begins a foreign language in college must pursue it for at least two years.

3. Ancient Civilization is prescribed for all students who do not pursue an ancient language.

4. The young women are required to take Physical Education in the Junior Year in addition to the work in the Freshman and Sophomore years.

## Requirements for the Degree of Bachelor of Science

The degree of Bachelor of Science is conferred on a candidate who has completed the course in one of the following technical departments: Biology, Chemical Engineering,

Civil Engineering, Electrical Engineering, Mechanical Engineering and Home Economics. The designation of the degree is Bachelor of Science in Biology, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering or in Home Economics.

### Electives

In the choice of electives the regulations pertaining to the choice of electives for the degree of Bachelor of Arts apply, as far as may be necessary, to the choice of electives for the degree of Bachelor of Science.

## Conspectus of Courses Leading to the Degree of Bachelor of Science

Cl. stands for class-room hours.

L. stands for laboratory hours.

Cr. stands for credit hours.

## BIOLOGY

### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 5	3	4	5	Chemistry 6	3	4	5
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Drawing 1		4	2	Drawing 2		4	2
Modern Language	3		3	Modern Language	3		3
Physical Education		3		Physical Education		3	

### SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 25	3	4	5	Biology 26	3	4	5
Chemistry 19	2	2	4	Chemistry 20	2	2	4
English Literature 1	3		3	Biology 14	3	4	5
Biology 17	1		1	Biology 18	1		1
Biology 1	3	4	5	Biology 2	3	4	5

**JUNIOR YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 7	3	4	5	Biology 8	3	4	5
Physics 1	3		3	Physics 2	3		3
Physics 3a		4	2	Physics 4a		4	2
Philosophy 1	4		4	Biology 24	2		2
Electives:				Electives:			
Modern Language	3		3	Biology 6	1	4	3
Chemistry 15			5	Philosophy 8	3		3
Biology 3		4	2	Biology 4		4	2
Biology 31	3		3	Biology 28	3	4	5
Biology 15	3	4	5	English Literature	3		3
Biology 9	1	4	3	Modern Language	3		3
				Biology 10	1	4	3
				Chemistry 12			4

**SENIOR YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 19	3	4	5	Biology 32	3		3
Biology 29	3	4	5	Electives:			
Electives:				Biology 12	1	4	3
Biology 27	3		3	Biology 22	3	4	5
Biology 9	1	4	3	Biology 30	3	4	5
Chemistry 31			4	Other electives from the			
Other electives from the				Junior and Senior			
Junior and Senior				Electives of the A. B.			
Electives of the A. B.				Course			
Course							

**CHEMICAL ENGINEERING****FRESHMAN YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 3	3	4	5	Chemistry 4	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	German (or French)	3		3
German (or French)	3		3	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Public Speaking	2		2	Public Speaking	2		2
Physical Education		3		Physical Education			3

**SOPHOMORE YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 17	3	4	5	Chemistry 18	3	4	5
Chemistry 13	2	2	3	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineer-			
Mechanical Engineer-				ing 16		4	2
ing 15		4	2	Physics 4	3		3
Physics 3	3		3	Physics 4a		4	2
Physics 3a		4	2				

# JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 35	1		1	Chemistry 36	1		1
Chemistry 19	3	4	5	Chemistry 20	3	4	5
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Physics 5	2	6	5	Physics 6	2	6	5
Electives:				Electives:			
Drawing 5	1	2	2	Drawing 6	1	2	2
Economics	3		3	Economics	3		3
Electrical Engineer- ing 1	3	4	5	Electrical Engineer- ing 2	3	4	5
Electrical Engineer- ing 3	3		3	Mathematics 26	3		3
				Mechanical Engineer- ing 2	4	2	5

# SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 25	2	2	3	Chemistry 26	2		2
Chemistry 27		8	3	Chemistry 28		8	3
Chemistry 29	3	4	5	Chemistry 30	3	4	5
Economics 7	2		2	Civil Engineering 6	1		1
Electives:				Electives:			
Biology 29	3	4	5	Biology 30	3	4	5
Economics	3		3	Economics	3		3
				Mechanical Engineer- ing 6		3	1
				English	3		3

# CIVIL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2		4	2
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineer- ing 14		4	2
Physical Education		3		Modern Language	3		3
				Physical Education		3	



## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 27	2	2	3	Drawing 4		2	1
Drawing 3		2	1	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Modern Language	3		3
Mechanical Engineer- ing 17		4	2	Surveying 2	2		2
Modern Language	3		3	Surveying 4		10	5
Surveying 1		10	5	Elective	3		3

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 1	1		1	Civil Engineering 10	2		2
Civil Engineering 9	1		1	Civil Engineering 12	2		2
Civil Engineering 11	1		1	Civil Engineering 14	1		1
Civil Engineering 13	2		2	Civil Engineering 16	3		3
Electrical Engineering 3	3		3	Mathematics 24	3		3
Physics 3	3		3	Mechanical Engineer- ing 2		3	2
Physics 3a		4	2	Physics 4	3		3
Surveying 5		6	3	Physics 4a		4	2

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	5		5	Biology 28	3	4	5
Civil Engineering 7	3		3	Civil Engineering 4	5		5
Electrical Engineering 1	3	4	5	Civil Engineering 6	1		1
Physics 5	2	6	5	Electrical Engineering 2	3	4	5
				English Composition 6	3		3

## ELECTRICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineer- ing 14		4	2
Physical Education		3		Modern Language	3		3
				Physical Education		3	

### SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 27	2	2	3	Drawing 4		2	1
Drawing 3		2	1	Economics	3		3
Mathematics 7	1		1	Mathematics 8	1		1
Mathematics 11	3		3	Mathematics 12	3		3
Mechanical Engineering 17	4	2		Mechanical Engineering 18	4	2	
Modern Language	3		3	Modern Language	3		3
Physics 3	3		3	Physics 4	3		3
Physics 3a		4	2	Physics 4a		4	2

### JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineering 1	3	4	5	Electrical Engineering 2	3	4	5
Electrical Engineering 3	3		3	Mechanical Engineer- ing 2		3	2
Physics 5	2	6	5	Physics 6		2	6
Elective : Economics				Elective : Economics			5

### SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	3		3	Civil Engineering 6	1		1
Civil Engineering 7	3		3	Civil Engineering 16	3		3
Electrical Engineering 5	3		3	Electrical Engineering 6	3		3
Electrical Engineering 7	3		3	Electrical Engineering 10	3		3
Electrical Engineering 9	3	2	4	Electrical Engineering 12	3		3
Electives:				Electives:			
Economics				English Composition	3		3
English Composition 9				Mathematics 26	3		3
				Surveying 6	6		3

## MECHANICAL ENGINEERING

### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineering 14	4	2	
Physical Education		3		Modern Language	3		3
				Physical Education		3	

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 27	2	2	3	Drawing 4		2	1
Drawing 3		2	1	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineering 18	4	2	
Mechanical Engineering 17	4	2		Modern Language	3		3
Modern Language	3		3	Physics 4	3		3
Physics 3	3		3	Physics 4a		4	2
Physics 3a		4	2	Elective			3

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineering 1	3	4	5	Electrical Engineering 2	3	4	5
Mechanical Engineer- ing 7		4	2	Mechanical Engineer- ing 2	3	2	4
Mechanical Engineer- ing 11	2		2	Physics 6	2	6	5
Physics 5	2	6	5	Elective			2

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	3		3	Civil Engineering 6	1		1
Civil Engineering 7	3		3	Electrical Engineering 6	3		3
Electrical Engineering 5	3		3	Electrical Engineering 10	3		3
Mechanical Engineer- ing 3	2	4	4	Mechanical Engineer- ing 6	2	4	4
Mechanical Engineer- ing 5	2	2	3	Mechanical Engineer- ing 8	2	4	4
Mechanical Engineer- ing 9		4	2	Electives:			
				Mathematics 26	3		3
				Surveying 6		6	3

## HOME ECONOMICS

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 17			5	Chemistry 18			5
English Composition 1	3		3	English Composition 2	3		3
Foreign Language	3		3	Foreign Language	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 6	2		2
Home Economics 1		2	1	Home Economics 2		2	1
Physical Education		2		Physical Education		2	

**SOPHOMORE YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 13	3	4	5	Biology 14	3	4	5
Chemistry 23			3	Chemistry 24			3
English Literature 1	3		3	Foreign Language	3		3
Foreign Language	3		3	Home Economics 10	1		1
Home Economics 3	1		1	Home Economics 12	1	4	3
Home Economics 7	3		3	Home Economics 4		2	1
Physical Education		2		Physical Education		2	

**JUNIOR YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
History 1	3		3	History 2	3		3
Home Economics 11			2	Home Economics 6		2	1
Home Economics 13			3	Home Economics 8	1	4	3
Home Economics 21	3		3	Home Economics 14	3	2	4
Home Economics 25	2	2	3	Home Economics 22	3		3
Home Economics 5		2	1	Home Economics 26	2	2	3
Physical Education		2		Physical Education		2	
Elective from A. B. Course							

**SENIOR YEAR**

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 21	3	4	5	Home Economics 20	4		4
Home Economics 9 or	1	4	3	Home Economics 16 or	1	2	2
Home Economics 15	3	2	4	Home Economics 18			3
Electives from the Junior and Senior A. B. Course.				Electives from the Junior and Senior A. B. Course.			
No student may take less than sixteen hours, nor more than nineteen hours.				No student may take less than sixteen hours, nor more than nineteen hours.			

The following subjects are suggested for those preparing to teach: Education 1, 2, 6.

**REQUIREMENTS FOR ADVANCED DEGREES**

The degrees of Master of Arts and Master of Science will be conferred upon Bachelors of Arts or of Science who shall have satisfied the following requirements:

1. One year of resident work. Graduates of Bucknell University who attained an average grade of eighty-five per cent may do a part of the work in absentia, but will not be given the degree in less than three years after graduation. Graduates of Bucknell University who at the end of their Senior year have completed one-half of the work required for the Master's degree, may be admitted to

the Master's degree one year after receiving the Bachelor's degree.

2. The completion, with a grade not lower than B, of thirty hours' work of an advanced nature, of which a major of eighteen hours must be in one department. All courses must have the approval of the head of the Department in which the major is chosen, and of the Committee on Advanced Degrees. No credit will be given for work done in other institutions which has been counted for a degree.

3. All non-resident graduate students must enroll with the Registrar before November first of the college year.

The special field in which the work is done will be designated in the Master of Science diplomas when recommended by the Professor.

The degrees of Civil Engineer, Electrical Engineer, Mechanical Engineer and Chemical Engineer will be conferred only upon persons who have proved their ability to plan and direct professional work or original work in applied science. The candidate must have received a Bachelor's degree from Bucknell University at least five years before registration for the advanced degree, and must have practiced his profession successfully for a similar period, during at least one year of which he must have had responsible charge of work as principal or assistant. When a candidate registers, he must present a detailed account of his professional experience, which must be approved by the Committee on Advanced Degrees in consultation with the Professor in charge of the Department in which he registers. Candidates must also present a satisfactory thesis or an approved equivalent of the same, which shall give evidence of their fitness to receive the degree sought. This thesis may not be a mere description of engineering work of a usual character, nor a

digest of existing literature, but shall describe or contain some distinct contribution to the engineering profession.

Membership of an approved grade in the principal engineering or technical societies may be considered sufficient evidence of a candidate's fitness to receive an engineering degree.



# COURSES OF INSTRUCTION

The term hour or hours, unless otherwise specified, signifies credit. The odd numbers indicate first semester courses.

## ART

1. **Art History.** Medieval and Modern. Juniors and Seniors. First semester. One hour. Professor Martin.

## BIBLE

1. **Hebrew History and Literature.** Juniors and Seniors. First semester. Three hours. Professor Phillips.

2. **New Testament History and Literature.** Juniors and Seniors. Second semester. Three hours. Professor Phillips.

4. **The Gospels.** Juniors and Seniors. Second semester. Three hours. Professor Phillips.

New Testament Greek. (Greek 7-8). Professor Hamblin.

## BIOLOGY

Professors Davis and Stewart, Assistant Professor Rice, Mrs. Davis and Mr. Miller

The Biology Course is designed to prepare students to teach in Secondary Schools, to enter a graduate school, or to pursue the study of medicine. Students who are pursuing pre-medical subjects should consult the Professor in Biology in regard to the selection of subjects.

1. **Zoology.** Lectures, text-books, and laboratory work. The fundamental principles of Biology are presented and illustrated by direct and comparative study of the lower forms of life, beginning with the Protozoa. Attention is paid to the structure, development, relationships, behavior, and economic value of a wide series of organisms. Sophomores. First semester. Five hours.

2. **Zoology.** The second semester continues the comparative study of animals by dissection of the higher forms, including mammals. Sophomores. Second semester. Five hours.

Prerequisite: Course 1.

**3. Ornithology.** A study of living birds in the field. The student learns the terms used in describing birds by the use of text-books, bird skins and mounted specimens. The course includes: "Finding and Naming Birds", "The Distribution of Birds", "Migration of Birds", "The Voice of Birds", "The Nesting of Birds", "The Plumage of Birds", "The Food of Birds", and "The General Activities of Birds". The student is taught how to make bird skins. Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2.

**4. Ornithology.** The course continues the work of the first semester. Juniors. Second semester. Two hours.

**6. Entomology.** Recitations and laboratory work. In this course each student makes a thorough study of the dissection, life history, and habits of insects representative of the different orders. Special attention is given to the economical importance and relation of insects to agriculture. Juniors. Second semester. Two hours.

Prerequisite: Course 1.

**7. Microscopic Anatomy.** Lectures, text-books, and laboratory work. The first semester's work covers the embryology of representative forms as the chick and pig. The methods employed in the laboratory give the student much practice in fixing, dehydrating, embedding, and sectioning tissues. Juniors. First semester. Five hours.

Prerequisite: One year of Zoology and Descriptive Chemistry.

**8. Microscopic Anatomy.** The second semester covers the histology of the human body and is illustrated by the preparation of a large series of microscopic slides by each student. Juniors. Second semester. Five hours.

Prerequisite: Course 7.

**9. Osteology.** Lectures covering the development of the skeletal system. Laboratory work on the human skeleton articulated and disarticulated; the gross structure of bones; the preparation and comparative study of skeletons of other vertebrates. Seniors. First semester. Three hours.

Prerequisite: One year of Zoology.

**10. Human Anatomy.** Dissection and quizzes on the parts dissected. Each student is assigned to the dissection of one quarter of the human cadaver. This course is designed to instruct the student in the general method of dissection in the relation of the structures in the body, and to present a general idea of regional anatomy. Models and text-books are used as guides. Juniors. Second semester. Three hours.

Prerequisite: One year of Zoology.

**12. Human Anatomy.** A course similar to the preceding. The student is assigned to the part of the cadaver which he has not previously dissected. This course in Human Anatomy, following the preceding one, affords the student an opportunity to make a dissection of the entire human body. Seniors. Second semester. Three hours.

Prerequisite: Course 10.

**14. Human Physiology.** The aim of this course is to acquaint the student with the general principles of Physiology, including a brief survey of the structure of the human body, motion, the central nervous system, organs of special sense, respiration, circulation, digestion, secretion, and excretion.

The work consists of lectures, demonstrations, and a personal study by the student of a designated text-book in Physiology. Each student spends four hours a week in the laboratory performing practical experiments in Physiology. Sophomores. Second semester. Five hours.

**15. Human Physiology, Advanced.** A more detailed study of the action of motor and nerve tissue is made in this course than in the preceding one. Likewise more advanced work is presented on blood and circulation, external and internal respiration, regulation of body heat, chemical coordination, digestion and absorption.

The course consists of lectures and demonstrations. Each student spends four hours a week in the laboratory and has the use of all essential apparatus needed to experiment with freshly prepared material. Considerable time is spent on the physiological chemistry of blood, milk, foods and urine. Juniors. First semester. Five hours.

Prerequisite: One year of college Zoology, Chemistry, Physics, and Course 14.

**13. Biology, Domestic Science.** This course is designed to present the fundamental properties of living matter. The structure, form, and life habits of one-celled and multi-cellular plants and animals are studied. The inter-relation of the animal and plant kingdoms is presented. Simple problems in evolution and heredity are discussed.

The work consists of lectures, quizzes, and a personal study by the student of a designated text in Biology. Four hours a week are devoted to laboratory exercises on living and preserved material. Each student has the use of a compound microscope, and is instructed in its care and use. Sophomores. First semester. Five hours.

**17 and 18. Scientific German or French.** The reading of foreign Biological Literature. Sophomores. First and second semesters. Two hours.

Prerequisite: German six hours or French six hours.

**19. Bacteriology.** By the method of recitations, lectures, and laboratory work, the student is given the fundamentals in micro-biology. The laboratory work includes the making of culture media, methods of sterilization, isolation of bacteria in pure cultures, staining of films, the examination of bacteria, and the measuring of micro-organisms under the microscope; a study of bacteria in milk, drinking water, and sewage. Seniors. First semester. Five hours.

Prerequisite: Zoology or Biology, and six hours of Chemistry.

**21. Bacteriology, Domestic Science.** This course is similar to the preceding one. Stress is placed upon the relation of bacteria, yeasts, and molds to the preparation and preservation of foods. The bacteriological problems of personal and public hygiene and sanitation are included. Seniors. First semester. Five hours.

Prerequisites: Zoology or Biology, and the first course in Chemistry.

**22. Bacteriology, Advanced.** This course is designed to be a continuation of either of the preceding courses in Bacteriology. The characteristics of the various groups of pathogenic bacteria are presented in lectures and readings from standard text-books on Bacteriology and monographs. The laboratory work includes the cultural characteristics of the various pathogenic groups, quantitative and qualitative bacteriological analysis of milk and water, culturing of naso-pharyngeal swabs, and some of the more simple serological reactions, such as agglutination, precipitation, etc. Seniors. Second semester. Five hours.

Prerequisite: Courses 19 and 24.

**24. Sanitary Science.** A lecture course setting forth the relation of proper sanitation to disease, the history of epidemics, the nature and value of vaccination, and other factors controlling infection and resistance. Juniors. Second semester. Two hours.

**25. Botany.** Recitations, lectures and field work. This is a general course including the anatomy of the representative types and their relation to the environment; a study is made of the local flora. The laboratory work and lectures develop the subject from the evolutionary standpoint. Sophomores. First semester. Five hours.

**26. Botany.** This course continues the work of the first semester. Field work to show the winter conditions of trees and shrubs. Systematic Botany. Use of manuals such as Gray's and Britton's and Brown's. Sophomores. Second semester. Five hours.

Prerequisite: Course 25.

**27. Genetics.** The lectures and reports deal with the facts and problems of variation and heredity, especially their application to mankind. Text-books by such authors as Walter, Castle, and Conklin. Seniors. First semester. Three hours.

**28. Forestry.** This course covers the factors that control and regulate the development of forests. In the laboratory and the field work the students are taught to identify the trees.

**29. Geology and Mineralogy.** Recitations, lectures, and laboratory work. A general course intended to give the leading facts and principles of Geology and the more important events in the geological history of the earth. The development of the North American continent is studied in detail. The laboratory work includes determinative Mineralogy. Seniors. First semester. Five hours.

**30. Economic Geology.** Recitations, lectures and laboratory work. An economic study of the rocks and minerals of economic importance including metals and non-metals. Seniors. Second semester. Five hours.

Prerequisite: Chemistry and Geology.

**31. Physiological Psychology.** Recitations, lectures and laboratory work. The aim is to study the development of the physiological bases of the mind. Juniors. First semester. Three hours.

**32. Comparative Psychology.** Recitations, lectures and reports. The germinal bases of the mind. In the development of the mind comparisons are made between human development and that of other animals. The oneness of life in respect to its fundamental processes is studied by such comparisons. Seniors. Second semester. Three hours.

## CHEMISTRY AND CHEMICAL ENGINEERING

Professor Owens, Professor Brown, Associate Professor Groner,  
Assistant Professor Schuyler and Mrs. Brown

**1 and 2. General Inorganic Chemistry and Qualitative Analysis.** This is a fundamental course required of all Engineering students except those in Chemical Engineering. The course covers the laws of chemistry, a study of the methods of preparation, properties and uses of the most important elements and their compounds. The application of chemistry to the arts and manufactures is



an important feature of the course. About one-third of the time is devoted to qualitative analysis. The work is conducted by text-book, lectures, recitations and laboratory work. First and second semesters. Ten hours.

**3 and 4.** This course is similar to 1 and 2 but modified to meet the needs of Chemical Engineering students. Additional work is required in this course. First and second semester. Ten hours.

**5 and 6.** This course is similar to 1 and 2 but adjusted to meet the needs of students in Biology and those who intend to study medicine. First and second semesters. Ten hours.

**7 and 8.** This course is similar to 1 and 2 but adjusted to meet the needs of students in Home Economics. First and second semesters. Ten hours.

**9 and 10.** This is a briefer course in general inorganic chemistry. The work is suited to the needs of such students as desire a knowledge of chemistry for informational and cultural value. This course will not be considered as a prerequisite to any of the more advanced courses. Students who present high-school chemistry as an entrance credit will be allowed to register for the course.

First and second semesters. Six hours.

**12** This course is a continuation of 5 and 6 and is given to meet the entrance requirements in general inorganic chemistry of certain medical colleges. Juniors. Second semester. Four hours.

**13. Metallurgy.** The sources, manufacture, properties and uses of the different metals, with the influence which various impurities exert, are studied. Special attention is given to iron and steel, also the various special alloys which are being placed upon the market. Text, lecture and laboratory. Sophomores and Juniors. First semester. Three hours.

Prerequisite: Courses 1 and 2 or the equivalent.



**14. Agricultural Chemistry.** This is a course in the study of the relation of chemistry to agriculture. The course covers the essentials of plant and animal chemistry. A study is made of the composition of soils and fertilizers. The general principles of agriculture are given consideration.

This course covers the legal requirements for teachers in the high schools of Pennsylvania. Second semester. Three hours.

Prerequisite: Courses 1 and 2 or the equivalent.

**15 Quantitative Analysis.** This is a course in elementary quantitative analysis covering both gravimetric and volumetric methods. The course meets the needs of students who intend to study medicine, and others who desire a knowledge of elementary quantitative analysis. First semester. Five hours.

Prerequisite: Courses 5 and 6 or the equivalent.

**17 and 18. Quantitative Analysis.** Lecture, recitation and laboratory work. This course aims to teach the student the fundamentals of analytical procedure and manipulation. Gravimetric and volumetric determinations are first made with pure chemicals. This is followed by the analysis of limestone, ores, alloys, oils, gas, water, etc. The latter part of the second semester is given to special methods in technical analysis and the determination of traces of impurities in the so-called "chemically pure" reagents. Required of Chemical Engineers and elective for others who may be able to qualify for the work. Sophomores. First and second semesters. Ten hours.

Prerequisite: Courses 3 and 4 or the equivalent.

**19 and 20. Organic Chemistry.** This course is an introduction to the study of the carbon compounds. The work is given with emphasis on the relation of organic chemistry to industrial chemistry. The course is intended for Chemical Engineering students and others who may be able to qualify for the work. First and second semesters. Ten hours.

Prerequisite: Courses 3 and 4 or the equivalent.

**21 and 22.** This course is similar to 19 and 20 but adjusted to meet the needs of Biology students and those who intend to study medicine. First and second semesters. Eight hours.

Prerequisite: Courses 5 and 6 or the equivalent.

**23.** This is a brief course in the chemistry of carbon compounds. The work is arranged to meet the needs of Home Economics students. First semester. Three hours.

Prerequisite: Courses 7 and 8 or the equivalent.

**24. Food Chemistry.** This is an elementary course in the study of the chemistry of foods. Second semester. Three hours.

Prerequisite: Course 23.

**25 and 26. Industrial Chemistry.** A series of lectures and recitations upon the most important technical chemical operations exclusive of metallurgy. It is essentially a study of the application of chemical principles to technical processes and the mechanical methods of applying these processes, supplemented, so far as possible, by visits to plants in operation. The course includes a study of such industries as the manufacture of sulphuric acid, alkalies, glass, cement, rubber, paper, dyestuff, etc. Seniors. First and second semesters. Four hours.

Prerequisite: Courses 13, 19, 20.

**27 and 28. Chemical Preparations.** Primarily a laboratory course, the experiments duplicating, so far as possible, the operations used in industrial works. Underlying principles and percentage yield are required in the written report of each experiment. About thirty-five preparations are required. Inorganic substances are first prepared and purified. Approximately one-third of the work consists of the electrolytic preparation of inorganic and organic compounds. Seniors. First and second semesters. Six hours.

Prerequisite: Courses 13, 19, 20, 33, 34, Physics 2, 3.

**29 and 30. Physical Chemistry.** Class and laboratory work. Class work consists of lectures, recitations and problems. This course is fundamental in character and is intended to develop the idea of physical chemistry as applied to actual problems in industrial operations. A study is made of the kinetic theory of gases, gas laws, vapor pressure, equilibria, phase rule, theories of solution, osmotic pressure, etc. The latter part of the year is given to the study of electrochemistry and chemical statics and dynamics. Laboratory work is one experiment per week. Written reports and discussions required for each experiment. The laboratory work includes the determination

of density of gases, viscosity, optical activity, refraction, partition coefficients, molecular weights by various methods, reaction velocity, transport numbers, electromotive force, conductivity, etc. Students use the calorimeter, colorimeter, refractometer, polarimeter, tintimeter, viscosimeter, etc. and are made to recognize their application to industrial problems. Seniors. First and second semesters. Ten hours.

Prerequisite: Courses 17, 18, 19, 20, 33, 34; Mathematics through Integral Calculus; Physics: All Engineering Physics to the end of the Junior year.

**31. Physical Chemistry.** This is an elementary course in physical chemistry. The work is suited to the needs of Biology students and those who intend to study medicine. The course meets the entrance requirements of all medical colleges. First semester. Four hours.

Prerequisite: Courses 21, 22 or the equivalent.

**33 and 34. German Chemistry.** A course in which a study is made of selections from standard German periodicals. The work in this course is usually a study of the Chemiker Kalender for the current year. Juniors. First and second semesters. One hour.

Prerequisite: Courses 3, 4, 17, 18, German: 6 hours.

**35 and 36. Special courses.** These courses are given at the option of the professor in whose department such work would fall. They are laboratory courses open to Seniors. Credit to be arranged.

NOTE:—Students who intend to teach Chemistry should elect the following courses: 1 and 2 (or 3 and 4), 15 (or 17 and 18), 19 and 20, 25 and 26, 29 and 30.

## CIVIL ENGINEERING

Professor Lindemann

**1. Architectural Design.** A course in which are considered the elementary principles of building construction. Juniors. First semester. One hour.

**3 and 4. Bridges and Buildings.** The work of this course includes the solution of problems in graphic statics; the determination of stresses and deformations in framed structures by graphic and algebraic methods; the calculation and design of roof and bridge trusses, also the detailing and drafting of the same. Seniors. First and second semesters. Ten hours.

**6. Contracts.** A course in which are considered the principles of Common Law as applied to contracts. Seniors. Second semester. One hour.

**7. Hydraulics.** The work of this course includes the theory of Hydrostatics and Hydraulics; the flow of water over weirs, through orifices and tubes, and in pipes, canals and rivers; the measurement of water-power; the theory of water-wheels and turbines. Seniors. First semester. Three hours.

**9 and 10. Masonry and Foundations.** The work of this course includes a consideration of the materials of masonry construction, their preparation and use; a study of foundations—ordinary, pile and under-water; the investigation and design of masonry dams, retaining walls, abutments, piers, chimneys, culverts and arches. Juniors. First semester. One hour. Second semester. Two hours.

**11 and 12. Roads and Pavements.** The work of this course includes a study of the economic location, design, and construction of roads and pavements; a comparison of the materials and methods of construction; the design of some road or pavement, including the preparation of drawings, specifications and estimates for the same. Juniors. First semester. One hour. Second semester. Two hours.

**13 and 14. Strength of Materials.** The work of this course includes a study of simple and combined stresses, and the resulting deformations; a consideration of the methods employed in testing the materials of construction; the solution of numerous problems in the design and investigation of beams, columns, shafts, pipes and footings. Reinforced concrete receives special attention. Juniors. First semester. Two hours. Second semester. One hour.

**16. Water Supply and Sanitary Engineering.** The work of this course includes the consideration of collection and storage of water, quantity of water required, rainfall, flow of streams, evaporation, supplying capacity of water-sheds, springs and wells; a study of the various methods of sewage disposal; the design of a water supply system and of a sewage disposal plant. Juniors. Second semester. Three hours.

Surveying, see Surveying.

## ECONOMICS AND POLITICAL SCIENCE

Professor Heim

Assistant Professor Howes

### INTRODUCTORY COURSES

**1. Introduction to the State and Society.** The development of political institutions and of political and social theories. Sophomores. First semester. Two hours.

**2. Economic History.** The development of Economic Institutions, with special emphasis upon the development of the economic life of Europe. Sophomores. Second semester. Two hours.

### ECONOMIC GROUP

**3. Economics.** A general course covering the field, but placing emphasis upon organization, value, production and consumption. Sophomores. First semester. Three hours.

**4. Economics.** Current economic problems, with special reference to theories of distribution. Continuation of 3. Sophomores. Second semester. Three hours.

**5. Business Organization.** Problems of organization and administration of business units, and their interrelation. Juniors and Seniors. First semester. Three hours.

**6. Business Finance.** The financial organization of business units. Methods of raising funds and their management. Types of investment securities. Juniors and Seniors. Second semester. Three hours.

**7. Principles of Accounting.** Theory of balance sheet accounts. Problems of technique. Classification and interpretation of accounts. Preparation of financial statements. Juniors and Seniors. First semester. Three hours.

**8. Principles of Accounting.** A continuation of course 7. Problems of partnership and corporation accounts. Labor saving devices. Valuation of assets. Juniors and Seniors. Second semester. Two hours.

Prerequisite: Course 7.

**9. Money and Banking.** Juniors and Seniors. First semester. Two hours.

**10. Public Finance.** Public revenue and expenditures. Preparation of budgets. Public taxation. Public Borrowing. Juniors and Seniors. Second semester. Three hours.

**11. Markets and Marketing.** Analysis of markets. Methods and organization of markets, and methods of financing. Juniors and Seniors. First semester in alternate years. Two hours.

**12. International Trade.** Foreign exchange. Commercial policies. Promotion of foreign trade and shipping. Methods of exporting. Juniors and Seniors. Second semester. Two hours. In alternate years.

**13. Railroad Transportation.** Juniors and Seniors. First semester. Two hours. In alternate years.



**14. Principles of Insurance.** Juniors and Seniors. Second semester. Two hours. In alternate years.

### POLITICAL SCIENCE

**15. Business Law.** The place of law in business operations and a study of the fundamental principles of the law of Contracts. Juniors and Seniors. First semester. Two hours.

**16. Business Law.** The law as applied to agency, sales, suretyship, mortgages, pledges, negotiable instruments, partnership, corporations. Second semester. Three hours.

Prerequisite: Course 15.

**17. National Government of the United States.** A descriptive course of the main features of our central government. Sophomores. First semester. Three hours.

**18. State Government in the United States.** A continuation of Course 17, dealing with state and county government in the United States. Sophomores. Second semester. Two hours.

**19. Municipal Government in the United States.** A study of the various forms of city government in the United States; municipal problems and reform. Juniors and Seniors. First semester. Two hours.

**20. Constitutional Law in the United States.** An advanced course in the principles of our government for those who have had Courses 17 and 18. Second semester. Three hours.

**21. Comparative Governments.** Government of England. A study of the principles of parliamentary government as it exists today in Great Britain with some attention to Canada, Australia, South Africa, and India. Juniors and Seniors. First semester. Three hours.

**22. Comparative Governments.** Continuation of Course 21. Governments of France, Italy, Germany, Switzerland, and Russia. Second semester. Two hours.

Prerequisite: Course 21.

**23. International Law.** Nature, history, and subjects of international relations: the laws of war, peace, and neutrality. Juniors and Seniors. Second semester. Three hours.

**24. The Police Power.** Standards of legislation. The relation of public policy to social and economic questions. Juniors and Seniors. First semester. Two hours.

**25. American Diplomacy.** A study of the foreign relations of the United States; the distinctive features of our foreign policy and our contribution to the Law of Nations. Juniors and Seniors. First semester. Three hours.



## EDUCATION

Professor Phillips

1. **History of Education.** Juniors and Seniors. First semester. Three hours.

2. **Psychology of Education.** Juniors and Seniors. Second semester. Three hours.

4. **Philosophy of Education.** Juniors and Seniors. Second semester. Three hours.

5. **Educational Theories.** Seniors. First semester. Two hours.

6. **Secondary Education.** Seniors. Second semester. Three hours.

7. **Religious Education.** Juniors and Seniors. First semester. Two hours.

**Comparative Psychology.** (Biology 32). Professor Davis.

**Child Study.** (Home Economics 22). Professor Carey.

**Teachers' Course in English.** (English Literature 13). Professor Herold.

**Teachers' Course in Mathematics.** (Mathematics 22) Assistant Professor Everett.

## ELECTRICAL ENGINEERING

Professor Rhodes and Mr. Irland

1. **Direct Current Machinery.** This course begins with a brief review of electromagnetism, followed by a careful study of the electric circuit involving the principles of the simpler alternating current circuits. Numerous problems are given to clearly illustrate the laws of these circuits. Attention is given to the various types of electrical measuring instruments, and their calibration, measurements of inductance, capacity and resistance. Then follows a careful study of the principles of dynamo electric machines as to their structural details, performance characteristics, and problems in operation. The work of the course is accomplished through lectures, recitations, laboratory experiments and writing of reports. Juniors. First semester. Five hours.

This course must be preceded or accompanied by the course in Electrical Measurements.

**2. Alternating Current Machinery.** The study of applied circuits is enlarged upon in this course and extended to include generators, transformers, induction motors, synchronous motors, synchronous converters, and motor generators. The same plan is followed as that in the development of the preceding course, and the laboratory work is primarily designed to illustrate the theory of the course, but wherever practicable, commercial tests in operation are performed. Juniors. Second semester. Five hours.

This course must be preceded by the course in Direct Current Machinery.

**3. Theoretical Mechanics.** A rapid review of the type forms of differential equations most frequently met in this work is taken up first. Then follows the study of forces, couples, moment of inertia, and flexible cords, together with the geometry of motion, dynamics of machinery, work, energy, and impact. Juniors. First semester. Three hours.

This course must be preceded by one year of Calculus.

**5 and 6. Electrical Design.** Numerous problems on the magnetic circuit are taken up and followed with the design and working drawing of an electromagnet. Then follows the discussion of the principles of design as applied to continuous and alternating apparatus. Each student is required to make complete computations for a continuous current generator or motor, alternator, induction motor, and two transformers. All electrical and magnetic dimensions are computed and scale drawings of the important parts are made. Seniors. First and second semesters. Six hours.

This course must be preceded by D.C. Machinery and A.C. Machinery.

**7. Generating Stations.** Comparative performance of the important prime movers and the economic management of generating plants and substation equipment are studied in detail and practical estimates made. Attention is also given to the application of storage batteries to the problems of distribution. The care of storage batteries, arrangement of switch gear, instruments, transformers, and lightning arresters are taken up in their relation to the generating station. Seniors. First semester. Three hours.

This course must be preceded by Alternating Current Machinery, and Boilers and Engines.

**9. Telegraphy and Telephony.** Attention is given in detail to the various systems of electric telephony and telegraphy in practical use, with reference to their principles and modes of application. The in-

stallation, maintenance and testing of telephone and telegraph lines are considered as well as the difficulties of their operation. Efficiency tests are made and graphs plotted. Seniors. First semester. Four hours.

Electrical Measurements, D. C. Machinery, and A. C. Machinery are prerequisites for this course.

**10. Electric Transmission, Line Construction, Wiring, and Economics.** The various systems and arrangements for power distribution, wiring for lighting, and substation feeder systems, are investigated. Practical problems in the economics of transmission and distribution including line construction are computed, and complete typical systems are worked out in detail. Seniors. Second semester. Three hours.

This course must be preceded by course in Alternating Current Machinery.

**11. Industrial Motor Control.** A study is made of the fundamental diagrams upon which most practical motor control circuits are based. Explanations are made of a large number of different types of hand controllers and automatic contactors and relays used in the control of electric motors of all types, both alternating and direct current. The student is required to trace the circuits and explain the operation of a number of control wiring diagrams in practical use, thus becoming familiar with various control devices and their application. Special course for those who have already taken the course in Alternating Current Machinery. First semester. Two hours.

**12. Electric Railways, Construction, Operation, and Economics.** This course deals with the principles and design of the different types of railway construction. Analysis of train performance, types of control, systems of braking, and methods of motor suspension are studied in detail. Estimates of complete equipment for a short line are made and prospective revenue from operation considered. The economics of the operation and maintenance of American railways is considered in the conclusion of the course. Seniors. Second semester. Three hours.

Alternating Current Machinery is a prerequisite for this course.

**13. Mechanical Telephone Exchanges.** Special Course. First semester. Three hours.

**14. Radio Circuits.** The first part of this course consists of the study of various types of radio apparatus and the circuits used in transmitting and receiving sets for wireless telegraphy. Particular attention is paid to the principles of operation of the various devices.

The latter part of the course consists of the experimental determination of the characteristic curves of three electrode vacuum tubes of several types, and a study of the theory of operation of these tubes as used in radio circuits. The students are given an opportunity to visit and inspect the radio station of the university, which is well equipped with transmitting and receiving apparatus. Special course for those who have already taken the course in Alternating Current Machinery. Second semester. Two hours.

**15. Storage Batteries.** Special Course. First semester. Three hours.

**16. Oscillography.** This course deals with the construction, adjustment and operation of the oscillograph. Oscillograms of continuous and instantaneous fluctuations of current and voltage in various forms and arrangements of electrical circuits are taken and printed. A report is presented containing a description of the construction and operation of the apparatus together with an analysis of the oscillograms obtained. Second semester. Three hours.

Prerequisite: E. E. 2. Special Course.

## DRAWING

**1 and 2. Freshman Drawing.** The work covers the use of instruments: geometrical problems: form and proportion of standard letters: methods of spacing and laying out of titles: orthographic and isometric drawings: sectioning, shading, and developments. First and second semesters. Four hours.

This course is required of all candidates for the B.S. degree except those in Home Economics.

**3 and 4. Sophomore Drawing.** The work of the first year is continued by the use of special problems for each branch of engineering. The Electrical Engineering and Mechanical Engineering students will make detailed drawings of bolts, nuts, and machine parts and also assembly drawings of complete machines. The Civil Engineering students will make detailed drawings of such structures as sewers, tunnels, bridges, and will enlarge and reduce maps. First and second semesters. Two hours.

Required in Civil Engineering, Electrical Engineering and Mechanical Engineering courses.

**5 and 6. Junior Drawing.** This course is required in the Electrical Engineering and Mechanical Engineering courses and covers the algebraic and graphical solution of problems in simple mechan-

isms such as levers, linkages, wheels in trains, pulleys, cams, gears and screws, and the mathematical design of cams and gear teeth. First and second semesters. Four hours.

## ENGLISH

Professors Herold, Rassweiler, and Rockwell, Associate Professor Groves, and Mr. Warfel

### A. ENGLISH LITERATURE

Professors Herold, Groves, and Rockwell

Courses with starred numbers are given regularly, but will be omitted in 1922-1923. Either Chaucer or Anglo-Saxon is prescribed for graduate students whose major for the degree of Master of Arts is English.

**1. English Literature.** A survey course in English prose and poetry for Sophomores; continued as Rhetoric 4 in the second semester. Required of all candidates for the degrees of A.B. and B.S. in Biology.

Prerequisite: Rhetoric 1 and 2. Four sections. First semester. Three hours.

**\*3. Victorian Literature, 1830-1890.** Carlyle, Ruskin, and Tennyson. Juniors and Seniors. First semester. Three hours.

**\*4. Victorian Literature Continued.** Arnold, the Brownings, Morris, and Swinburne. Juniors and Seniors. Second semester. Three hours.

**5. Eighteenth Century, 1700-1790.** Swift, Pope, Addison, Dr. Johnson, Gray, and Burns. Juniors and Seniors. First semester. Three hours.

**6. Revolt and Romanticism, 1790-1830.** Wordsworth, Coleridge, Scott, Byron, Shelley, Keats, and the essayists, Lamb and De Quincey. Juniors and Seniors. Second semester. Three hours.

**7. Pre-Shakespearean Drama.** Juniors and Seniors. First semester. Three hours.

**8. Shakespeare.** Juniors and Seniors. Second semester. Three hours.

**9. Dante and Milton.** A study of the great epics: Dante's "Divine Comedy" in an English translation, and Milton's "Paradise Lost." Juniors and Seniors. First semester. Three hours.



**10. American Literature to 1900.** A survey of American Literature and a course in American Ideals. Juniors, Seniors, and Sophomores by permission. Second semester. Three hours.

**\*11. Modern Drama.** A study of the new dramatic literature of Europe and America; its varieties, technique, aims, and problems. Juniors and Seniors. First semester. Three hours.

**12. Prose Fiction.** Studies in the development of the leading types of English prose fiction. Juniors and Seniors. Second semester. Three hours.

**13. Teachers' English.** A course in the aims and methods of secondary-school English. Juniors and Seniors. Special permission required. First semester. Three hours.

**\*14. Recent Literature.** The leading English and American non-dramatic authors and movements of the last thirty years will be considered. Juniors and Seniors. Second semester. Three hours.

**15. Anglo-Saxon.** A course in the forms and literature of Old English. Juniors and Seniors. First semester. Three hours. Alternating with the course in Chaucer.

**\*17. Chaucer and his Contemporaries.** A study of English life, language, and literature in the fourteenth century. Juniors and Seniors. First semester. Three hours.

## B. RHETORIC AND COMPOSITION

Associate Professor Groves, Professors Rockwell and Herold, and Mr. Warfel.

Advanced courses in Argumentation and Debating are catalogued under Public Speaking.

**1. Freshman Rhetoric.** Themes, lectures, conferences, a study of prose specimens, and collateral reading. Required of all students in the first year. Ten sections. First semester. Three hours.

**2. Continuation of Course 1.** Required. Second semester. Three hours.

**4. Composition and Literature.** Required of all candidates for the degree of Bachelor of Arts. Second semester. Three hours.

Prerequisite: Rhetoric 1 and 2.

**6. Business English.** An advanced course for Seniors in Engineering and Science. Second semester. Three hours.

Prerequisite: Rhetoric 1 and 2.



**7. News Writing.** Juniors, Seniors and Sophomores by permission. First semester. Two hours.

**8. Journalism.** Juniors and Seniors. Second semester. Two hours.

Note: In connection with this course, the editor-in-chief of The Bucknellian and of The Mirror may each receive an additional credit of three hours if approved by the English Department.

**10. Advanced Composition.** A discussion and practice of the essay, the short-story, and the special article. Seniors. Second semester. Three hours. Open only to those who receive special permission.

**\*11. Diction and Usage.** A study of words and their ways in English speech and of the general principles underlying questions of grammar, pronunciation, and vocabulary. Juniors and Seniors. First semester. Three hours.

## C. PUBLIC SPEAKING

Professor Rassweiler

In the first four courses, students are required to take eight laboratory periods under one of the assistants. Here students are given a hearing preliminary to presenting their selections before the class, and here more individual work in voice, gesture, and extempore speaking is given.

All candidates for the degree of Bachelor of Arts are required to take two of the first four courses during the first year. Course 1 or 7 is advised for the first semester, and Course 2 or 8 for the second. Either or both of the remaining two courses may be elected during the Sophomore year.

**1 and 2. Story Telling.** This subject is treated primarily not as an elocutionary art, but as the beginning of the study of the art of public address. Each semester. Two hours.

**3. and 4. Interpretation.** The art of discerning, sympathetic, and melodious reading. Each semester. Two hours.

**5 and 6. Effective Public Speaking.** Special attention is given to those principles of oral rhetoric which distinguish effective oral expression from the written form, the construction of speeches with a definite end in view adapted to a particular occasion, the development of a fluent oral vocabulary, and the public speaker's habit of mind. Each semester. Two hours.

**7 and 8. Debating.** Both theory and practice. Each semester. Two hours.

**9 and 10. The Elements of Expression.** A course for those desiring to do advanced work or who want work in Elocution. Problems of teaching are also discussed. First and second semesters. Two hours.

Required for the assistants in the department and elective for others.

**11. Advanced Argumentation and Debate.** This course is conducted to meet the demands of those who desire work in written argumentation or in oral debate. It should be elected by all those who desire to enter intercollegiate debates or the Junior debate. Second semester. Two hours.

Prerequisite: Course 8.

**12. Oratory.** Special attention is given to vigor and climax, and to the study of masterpieces. Second semester. Two hours.

Prerequisite: Course 6.

**13. Advanced Interpretation.** Special attention is given to emotional reaction and rendition. First semester. Two hours.

Prerequisite: Courses 3, 9, 10.

Alternating with Course 15.

**15. Dramatic Interpretation and Amateur Dramatics.** Dramatic expression, action, and problems in amateur stage craft. First semester. Two hours.

Prerequisite: Courses 3, 9, 10.

Alternating with Course 8.

## FUNDAMENTALS

President Hunt

1. The President meets the Freshmen, in four sections, one hour a week the first semester in a study of fundamental truth and the problems of student life. One hour.

The text-book for study is Fisher's small Manual of Christian Evidences.

## GERMAN

Professor Rockwell

1. **Elementary German.** Drill on pronunciation. Elements of grammar. Reading of easy prose. First semester. Three hours.

2. **Elementary German.** Reading of easy prose, free reproduction, vocabulary drill, dictation. Second semester. Three hours.

**3. Intermediate German.** Reading of prose. Practice in speaking and writing German. Vocabulary drill. Dictation. First semester. Three hours.

Prerequisite: Course 2 or its equivalent.

**4. Nineteenth Century Novel.** Rapid reading of leading novelists. Practice in speaking and writing German. Second semester. Three hours.

Prerequisite: Course 3.

**5. Schiller.** Reading of leading dramas. Discussion of life and work of Schiller. First semester. Three hours.

Prerequisite: Course 4.

**6. Lessing.** Reading of leading dramas, discussion of life and significance of Lessing. Second semester. Three hours.

Prerequisite: Course 5.

**7. Goethe.** Reading of principal dramas. Discussion of life and work of Goethe. First semester. Three hours.

Prerequisite: Course 6.

**8. Goethe.** Reading of Goethe's prose, discussion of his significance. Second semester. Three hours.

Prerequisite: Course 7.

**9. Nineteenth Century Drama.** Kleist and Grillparzer. Reading of principal dramas, discussion of their life and work. First semester. Three hours.

Prerequisite: Course 8.

**10. Nineteenth Century Drama.** Hebbel and Ludwig. Reading of principal dramas, discussion of their life and work. Second semester. Three hours.

Prerequisite: Course 9.

**11. The German Lyric.** Goethe, Schiller, Heine, Uhland, and minor poets. First semester. Three hours.

Prerequisite: Course 8.

**12. The Last Generation in German Literature.** A brief survey of modern developments in German and Austrian literary life. Second semester. Two hours.

Prerequisite: Course 11.

**14. Teachers' Course.** A brief survey of the materials and methods of the teaching of German. Second semester. One hour.

Prerequisite: Course 11.

**15 and 16. Readings in Biological German.** First and second semesters. Two hours.

Prerequisite: Course 2 or its equivalent.

**17 and 18. Readings in German Chemistry.** See Chemistry 33 and 34.

Prerequisite: Course 4 or its equivalent.

## GREEK

Professor Hamblin

Students entering without preparation in the language can begin Greek in College.

**1 and 2. Greek for Beginners.** An introduction to the Greek language based upon graded selections from Menander, Xenophon, Plato, Herodotus, and the New Testament. By an intensive study of the essential forms, a careful study of the vocabulary of representative Greek authors, and reading easy selections at sight, it is intended to cover in one year an equivalent of the usual Preparatory Course. First and second semesters. Six hours.

**3. Plato.** The Apology and Crito. Special topics in Greek syntax. The life and influence of Socrates. Selections from the Memorabilia at sight. First semester. Three hours.

**4. Lysias.** Select orations, with sight reading and Prose Composition. A study of Attic Oratory. Second semester. Three hours.

**5 and 6. Greek Drama.** One play each of Aeschylus, Euripides, and Aristophanes. Study of the Greek drama, theatre and meters. The development of drama. First and second semesters. Six hours. Alternating with Course 7-8.

**7 and 8. New Testament Greek.** Translation of the synoptic gospels; interpretations; Burton's Moods and Tenses; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. First and second semesters. Six hours.

Alternating with Course 5-6.

**9. Greek Civilization.** Political and Constitutional History of Greece. Influence of Greek civilization and thought on the world. Sophomores. First semester. Three hours.

Required of students in the A. B. Course who do not elect an ancient language.

**10. Greek Literature in English.** A course especially designed for students in the Scientific Courses, that they may become ac-

quainted with some of the Greek masterpieces. The best translations will be studied and explained, and informal lectures will be given on various phases of Greek Literature. Seniors and Juniors. Second semester. Three hours.

**12. Everyday Greek.** Greek words in English, including scientific terms. Intended to teach the use, meaning, and pronunciation of words of Greek origin, to those who have never studied the Greek language. Seniors and Juniors. Second semester. Two hours.

## HISTORY

Professor Colestock

**1. Medieval Europe.** Freshmen. First semester. Three hours. Required in the A.B. course.

**2. Modern Europe to 1815.** Freshmen. Second semester. Three hours.

Required in the A.B. course.

**3. English History I.** First semester. Two hours. Alternating with History 7.

**4. English History II.** Second semester. Two hours. Alternating with History 8.

**5. American History I.** First semester. Two hours. Alternating with History 9.

**6. American History II.** Second semester. Two hours. Alternating with History 10.

**7. English History III.** First semester. Two hours. Alternating with History 3.

**8. English History IV.** Second semester. Two hours. Alternating with History 4.

**9. American History III.** First semester. Two hours. Alternating with History 5.

**10. American History IV.** Second semester. Two hours. Alternating with History 6.

**11. Latin America.** First semester. Two hours. Alternating with History 13.

**12. The Ancient Orient.** Second semester. Two hours. Alternating with History 14.

**13. Contemporary Europe, 1815-1922.** First semester. Two hours.

Alternating with History 11.

**14. The Modern Orient.** Second semester. Two hours. Alternating with History 12.



## HOME ECONOMICS

Professor Carey, Miss Douglass, Miss Fowler, and Mrs. Brown

Instruction in home economics is designed to meet the needs of two classes of students: (1) Students who desire a general knowledge of the subject, but who do not wish to specialize in any phase of the subject; (2) Students who wish to specialize in some particular phase of the subject and make professional use of the training received. Upon completion of the prescribed course leading to the degree of B.S. in Home Economics, the pupil is ready for teaching or for a short practical course as pupil dietitian in a hospital or other institution.

**1 and 2. Drawing.** Freehand drawing, lettering, perspective, drawing technical finishings in a dress. Sketching of gowns and hats. Freshmen. First and second semesters. Two hours.

**3. Home Decoration.** This course deals with the furnishing of the home. The object of the course is to develop good judgment and taste in the selection and arrangement of furnishings for the home. Sophomores. First semester. One hour.

**4. Costume Design.** Short history of costume. Value of lines in composition. The effect of contrast and combinations. Costume and color for different types. Sophomores. Second semester. Two hours.

Prerequisite: Courses 1, 2.

**5 and 6. Millinery.** Making and covering of frames and fitting and trimming of hats. Juniors. First and second semesters. Six hours.

**7. Hygiene.** Home nursing, care of sick room, care of patients, first aid, simple bandaging, hygienic care of the home, relation of the home to the community. Sophomores. First semester. Three hours.

**8. Garment Making.** Elementary sewing; fundamental stitches, hand and machine work, applied to undergarments, darning, mending, machine appliances. Students provide material subject to the approval of the instructors. Juniors. Second semester. Three hours.



**9. Clothing.** Dressmaking and drafting, cutting, fitting and making of skirts, waists and dresses, measurements and drafting of patterns, use of commercial patterns. Seniors. First semester. Three hours.

Prerequisite: Courses 1, 2, 4, 8.

**10. Textiles.** Study and identification of cotton, wool, silk, and linen; their appropriateness in clothing. Sophomores. Second semester. One hour.

**11. Meal Preparation and Table Service.** The application of the principles of cookery to the preparation and serving of meals. The course will include the study, planning, cooking and serving of meals, methods of preparation and garnishing. Juniors. First semester. Two hours.

Prerequisite: Home Economics 12, Chemistry 23, 24.

**12. Elementary Course in Foods.** Selection and preparation of foods; their chemical composition and processes of manufacture. Laboratory work emphasizing fundamental principles of cookery. Sophomores. Second semester. Three hours.

**13. Household Management.** Care of house, choice of household equipment, and labor saving devices; apportionment of income. Juniors. First semester. Three hours.

**14. Food and Nutrition.** Food requirements at various ages in health and in certain diseases. Construction of dietaries. Invalid cookery. Juniors. Second semester. Four hours.

Prerequisite: Course 12.

**15. Dietetics.** Food requirements of the individual in health and disease, the nutritive properties of the various foods. Dietaries planned with especial regard to economic and social conditions. Seniors. First semester. Four hours.

Prerequisite: Courses 12, 14.

**16. Institutional Cookery.** Meal-planning with emphasis on the supplying of adequate diet to large groups. Attention to organization of institutional kitchen and lunchroom. Seniors. Second semester. Three hours.

Prerequisite: Courses 12, 14.

**18. Teachers' Course.** Equipment of laboratories; methods of presenting work; correlation with other subjects; planning and presenting lessons. Seniors. Second semester. Three hours.

**20. Advanced Course in Nutrition.** Physiological, bacteriological and chemical problems of food and nutrition. Special work on infant nutrition. Seniors. Second semester. Four hours.

Prerequisite: Home Economics 12, 14. Chemistry 7, 8, 17, 18.

**21. Descriptive Psychology.** The first semester is given to Descriptive Psychology, in which the facts and laws of the mind are carefully studied. Juniors. First semester. Three hours.

**22. Child Psychology.** A course is also given in Child Psychology, showing the relation of mind and body, and how the ideal of a sound mind in a sound body may be attained. Special attention is given to problems arising out of family and social relations. Juniors. Second semester. Three hours.

Prerequisite: Course 21.

**23. Vocational Psychology.**

Prerequisite: Course 21.

**25 and 26. Household Physics.** This course is designed to provide information relative to domestic engineering by presenting: first, the general principles of the various branches of Physics; second, the household appliances based upon these principles. Classroom work is supplemented by experiments performed in the laboratory by the individual students, and by observation of the methods of installation of various appliances. Juniors. First and second semesters. Six hours.

## LATIN

Professor Ballentine

**1 and 2. Course for Beginners.** First and second semesters. Six hours.

**3 and 4. Cicero.** (Orations); **Vergil** (Aeneid). First and second semesters. Six hours.

Courses 1-2 and 3-4 are offered for those who are not prepared to pursue the regular Freshman elective.

**5 and 6. Cicero.** (De Senectute); **Pliny** (selected letters); **Roman Comedy** (two or three plays of Terence). First and second semesters. Six hours.

**7. Livy.** First semester. Three hours.

Prerequisite: Courses 5, 6.

**8. Horace** (selections). Second semester. Three hours.

Prerequisite: Courses 5, 6.

**10. Roman Civilization.** Lectures, prescribed reading. Sophomores. Second semester. Three hours.

Required of students in the A.B. Course who do not elect an ancient language.

**11. Juvenal** (the principal Satires). First semester. Three hours.

Alternating with Course 13.

Prerequisite: Course 7.

**13. Tacitus** (Annals). First semester. Three hours.

Alternating with Course 11.

Prerequisite: Course 7.

**14. Plautus** (selected plays). Second semester. Three hours.

Alternating with Course 16.

Prerequisite: Course 8.

**16. Latin Poets** (selections). Second semester. Three hours.

Alternating with Course 16.

Prerequisite: Course 8.

**17. Roman Philosophy** (Cicero or Seneca). First semester. Three hours.

Alternating with Course 19.

Prerequisite: Course 7.

**19. Roman Law.** The course does not require a knowledge of the Latin language. Juniors and Seniors. First semester. Three hours.

Alternating with Course 17.

## MATHEMATICS

Professor Bartol, Assistant Professor Everett, Mr. Lowry,  
Mr. Gold, and Mrs. Clark

**1. Algebra and Trigonometric Functions.** Freshmen. First Semester. Four hours. Prescribed in all courses of study.

**2. Plane Trigonometry.** Freshmen. Second semester. Two hours. Prescribed in all courses.

**4. Analytic Geometry.** Freshmen. Second semester. Three hours.

Prescribed in the Engineering and Biology Courses: elective in all others.

**6. Solid Geometry.** Freshmen. Second semester. Two hours.

A college subject for those not taking an Engineering course or the course in Biology.

**7 and 8. Descriptive Geometry.** The course consists in practice in elementary orthographic projection with analytical study. It is basic to Mechanical Drawing. Sophomores. First and second semesters. One hour throughout the year.

Prescribed in the Engineering courses.

**10. Spherical Trigonometry and Astronomy.** The course includes a study of the earth and its motions, and of the constellations. Sophomores. Second semester. Two hours.

Elective in all courses of study except those of the Engineering departments. Open to Freshmen who have had Solid Geometry.

**11. Differential Calculus.** The theory is developed in the use of limits. Applications are freely made to the problems of Mechanics. Sophomores. First semester. Three hours. Prerequisite, Course 4.

Prescribed in the Engineering courses of study: Elective in all others.

**12. Integral Calculus.** Frequent applications are made to the problems of Geometry, Astronomy and Physics. Sophomores. Second semester. Three hours. Prerequisite: Courses 4 and 11.

Prescribed in the Engineering courses: Elective in all others.

**13. Higher Analytics.** The course covers an elementary treatment of the geometry of three dimensions, surfaces of revolution and higher plane curves. Juniors and Seniors. First semester. Three hours.

Elective in all the general courses of study except those of the Engineering departments. Alternates with Course 15.

**15. Advanced Algebra.** The course includes an elementary treatment of Determinants and of the Theory of Equations. Juniors and Seniors. First semester. Three hours. Alternates with Course 13.

Elective for all undergraduates except those in the Engineering Courses.

**17. Practical Astronomy.** A study of text-book and of instruments in the Observatory, with some practice. Juniors and Seniors. First semester. Three hours. Alternates with Course 19.

Elective except to Engineers. Prerequisite: Course 10.

**19. Differential Equations.** An introductory study. Juniors and Seniors. First semester. Three hours. Alternates with Course 17.

Elective except to Engineers.

Prerequisite: Courses 11 and 12.

**20. The Mathematical Theory of Investments.** An elementary treatment of the subject. Juniors and Seniors. Second semester. Three hours.

Elective for all undergraduates, except those in the Engineering Courses. Alternates with Course 22.

**22. Teachers' Mathematics.** A reading course in the history and literature of Mathematics, and a study of present day methods of teaching the subject. Juniors and Seniors. Second semester. Three hours.

Alternates with Course 20.

**24. Field Astronomy with Spherical Trigonometry.** Observations are made chiefly with surveying instruments, and computations are made from the students' field notes. Juniors. Second semester. Three hours.

Prescribed for Civil Engineers.

**26. Advanced Calculus.** The course includes centroid and moment of inertia problems from Mechanics, with a brief treatment of Differential Equations. Juniors and Seniors. Second semester. Three hours.

Elective to Seniors in Electrical Engineering and Mechanical Engineering, in the Arts Course, and to Juniors in Chemical Engineering.

Prerequisite: Courses 11 and 12.

## MECHANICAL ENGINEERING

Professor Burpee, Mr. Kunkle and Mr. Wilson

**2. Boilers and Engines.** This is a general course dealing in a concrete way with the generation and use of steam for power purposes. The course is largely descriptive and experimental; the text-book work being well supplemented by problems illustrating the subject matter.

The topics covered most fully are the analysis and combustion of fuels; types, construction and setting of boilers together with their auxiliaries. The steam engine and indicator are studied in a general way with special emphasis upon performance of the engine.

The results of the term's work are collected into a single comprehensive form by means of a series of boiler, engine and plant tests which are written up and reported in accordance with the Test Code of the American Society of Mechanical Engineers. Open to those who have taken Physics and Calculus. Text-book, Gebhardt's "Steam Power Plant Engineering", latest edition. Juniors. Second semester. Four hours.

Prerequisite: Mathematics 11 and 12, and Physics.



**3. Steam Turbines.** In this course the Steam Turbine Theory and Design are taken up in detail. A careful study is made of the principles underlying the Impulse, Reaction and Mixed Turbine. The entire field is gone over and the ideas obtained are collected and expressed by actually computing and drawing designs for two machines, one Impulse and one Reaction or Mixed Turbine. Text-book, Moyer "Steam Turbines", latest edition. Seniors. First semester. Four hours.

Prerequisite: Course 2.

**5. Steam Power Plants.** This course deals with the Power Plant as a whole. The matters receiving the major amount of attention are those pertaining to Condensers, Power Plant Auxiliaries, Piping and the general arrangement of the entire plant.

The work of the course culminates in the form of an original design completely worked out and drawings made showing floor plans and detailed sections of all important parts. Text-book, Gebhardt's "Steam Power Plants Engineering", latest edition. Seniors. First semester. Three hours.

Prerequisite: Course 2.

**6. Steam Boiler Design.** This course is almost purely design in character and dwells upon the construction and strength of pressure vessels of various types. Complete calculations and complete detailed drawings are made for the Return Tubular, Scotch Marine and Locomotive types of boilers. Text-book, Haven and Sweet "Steam Boilers and Pressure Vessels". Seniors. Second semester. Four hours.

Required of Mechanical Engineering students.

**7. Steam Laboratory Experiments.** This course is intended to familiarize the student with the instruments and equipment belonging to the Power Plant. Experiments are made on the steam calorimeter, steam engine, indicator, boiler-feed pump, water and steam meters, pipe insulating materials, steam gauges, recording instruments and flue gas analysis. Juniors. First semester. Two hours.

Prerequisite: Physics.

**8. Heating and Ventilating.** In this course a study is made of the various methods of heating and ventilating buildings. Problems are given on the methods of calculating heat losses, removal of foul air and the introduction of fresh air.

Under Direct Heating, hot air, steam vapor and hot water systems are studied. Under Indirect Heating, attention is given to public buildings, theatres, and factories. Complete calculations and



drawings for assigned buildings are required of each student. Seniors. Second semester. Four hours.

**9. Automobiles.** In this course the work taken up covers the automobile as a whole and in detail. A study is made of the passenger car, the truck and the tractor.

The text-book work is supplemented by a goodly amount of laboratory work in which cars are torn down and built up and the various parts completely analyzed. Text-book, Hobbs and Elliot "The Gasoline Automobile". Seniors. First semester. Two hours.

Open to Engineering students.

**11. Industrial Management.** This course is intended to give the student an idea of the established methods of managing industrial plants. Various systems of following up work in the plant, classifying materials, keeping of records and dealing with labor are studied. Juniors. First semester. Two hours.

Required of Mechanical Engineering students.

**13. Visiting Plants.** During the latter part of the first semester of the Senior Year the class in steam turbines and power plants spend a week in and about Philadelphia and New York City or in the Pittsburgh district visiting plants manufacturing power machinery. When possible this inspection tour is taken at the time of the Annual Meeting of the American Society of Mechanical Engineers so as to bring the students into touch with the leading engineers of the country.

This trip is required of the Senior Mechanical Engineering students and is open to all engineering students provided satisfactory arrangements can be made with the instructors in charge of their classes.

In addition to the above major tour there are several other tours made to nearby shops and industries where the students have a chance to see in a concrete way the application of the principles they are studying.

The students are not required, but are urged to make these tours. The expense of them is borne by the students themselves.

**Shop Work.** Under this head there are taught three branches: Pattern-Making, Foundry, and Machine Shop Practice. The work runs through the second semester of the Freshman Year and the entire Sophomore Year. The work is carried only so far as is considered necessary in order to give the student an intelligent idea as to how machinery and other articles manufactured from metals are made. No attempt is made to turn out finished mechanics, but it is

considered desirable that the engineer to some extent understand the work of the mechanic.

**14 and 15. Pattern Making and Foundry Work.** In Pattern Making it is assumed that the student is familiar with the use of wood-working tools. The work starts with the principles involved in the building of actual patterns. Allowances for draught, shrinkage, and machining are taught and the student builds patterns which he afterwards uses in the Foundry.

In Foundry Work a study is made of the composition and uses of moulding sands and other materials used about the Foundry. Green sand molds, both with and without dried cores, are made and poured. The principles of tamping, venting, gating and the various methods of delivering the pattern from the mold are studied. Attention is given to the construction, operation, and care of the cupola. The student is taught to make the molds, charge the cupola and pour his own flasks.

Pattern Making and Foundry must be taken at the same time. First and second semesters. Two hours.

**16 and 17. Machine Shop, General Course.** In this course the student is taught the mathematical principles of the lathe and similar machines. He is also taught how to operate the lathe, planer, shaper, milling machine and the drill press.

The lathe work starts with plain cylindrical work and advances through tapers, thread-cutting and making of cut gears. After this work is mastered the student is given instruction in laying out and other operations on the table and bench and finally he does some assembling.

The shop practice is supplemented by lectures and problems.

The course runs throughout the year and is required for one semester of all Engineering students. Two hours.

**18. Machine Shop, Advanced Course.** This course is required of the Mechanical Engineering students only and is very general in character. There is no definite outline for the work, but each student is assigned such pieces to work on as his particular need may require. In many cases the piece is a repair for some bit of machinery about the University.

The course is intended to carry to a more practical point the work of the general course. Students in this course are sometimes asked to assist instructing those in the more elementary course. Sophomores. Second semester. Two hours.

## MUSIC

Professor Stolz and Assistant Professor Moyer

**1 and 2. History and Literature of Music.** First and second semesters. Six hours.

**3 and 4. Musical Appreciation.** First and second semesters. Six hours.

**5 and 6. Theory of Music.** First and second semesters. Six hours.

## PHILOSOPHY

Professor Harris

The studies in this department embrace Psychology, Philosophy, and Ethics.

**1. Psychology, Descriptive and Explanatory.** First semester. Four hours.

Required of Juniors for A.B. degree.

**3. Abnormal Psychology.** Lectures, text-book, readings, and thesis. First semester. Three hours.

**Physiological and Experimental Psychology.** (Biology 31). Professor Davis.

**4. Philosophy of Mind.** Juniors and Seniors. Second semester. Three hours.

**6. History of Philosophy.** Text-book and Lectures. Second semester. Two hours.

Required of Juniors for A.B. degree.

**Roman Philosophy.** (Latin 17). Professor Ballentine.

**8. Ethics.** Second semester. Three hours.

Required of Juniors for A.B. degree.

**10. Ethics of Plato and Aristotle.** Study of the Republic and Nicomachean Ethics, with collateral readings and thesis. Juniors and Seniors. Second semester. Three hours.

**11. Social Ethics. Domestic Relations.** First semester. Three hours.

**12. Political Ethics. Duties of Citizenship; Ethics of International Relations,** with special reference to present day problems. Second semester. Three hours.

**13. History of Recent Philosophy.** Darwin, Spencer, and James. Juniors and Seniors. First semester. Three hours.

**14. Social Psychology.** The development of mental character in society. Juniors and Seniors. Second semester. Three hours.

## PHYSICS

Professor Simpson and Mr. Hall

**General Physics.** This course is designed as a culture course and is arranged for students who desire a general knowledge of Physics in its relation to everyday life. The work in the class room demands only a thorough knowledge of Mathematics as covered in the entrance requirements. Students who desire to teach Physics should supplement this course with courses 3 and 4.

**Physics 1. Mechanics, Heat and Sound.** First semester. Two hours.

**Physics 2. Light, Electricity and Magnetism.** Second semester. Two hours.

## PHYSICAL MEASUREMENTS

The following laboratory courses accompany Physics 1 and 2. They cover the entire field of Physics in an elementary way. No elaborate quantitative experiments are undertaken.

**1a. Mechanics, Heat and Sound.** First semester. One hour.

**2a. Light, Electricity and Magnetism.** Second semester. One hour.

## TECHNICAL PHYSICS

This course is designed to meet the requirements for later work in the technical courses. It is required in all the engineering courses and presupposes that the student has passed the mathematics required in these courses.

The instruction consists of lectures, recitations and laboratory work. All important phenomena are illustrated and experimental demonstrations of the principal laws are presented.

**Physics 3. Mechanics, Heat and Sound.** First semester. Three hours.

**Physics 4. Light, Electricity and Magnetism.** Second semester. Three hours.

## EXPERIMENTAL PHYSICS

The laboratory work includes experiments illustrating the general laws in all branches of Physics. The experiments are largely quantitative and use is made of instruments of precision. The work is en-

tirely individual, the student taking notes in the laboratory which are elaborated outside and presented for criticism.

**3a. Laboratory Work in Mechanics, Heat and Sound.** First semester. Two hours.

**4a. Laboratory Work in Light, Electricity and Magnetism.** Second semester. Two hours.

### ADVANCED PHYSICS

The following courses are designed primarily for engineering students, but are open to students who have completed course 3-4 or the equivalent and who have passed two semesters of the Calculus. They are of such a nature that a student who has successfully completed them will be fitted for graduate work in the best Universities and Technical schools.

**Physics 5. Electrical Measurements.** In this course the student is required to make a careful study of the instruments of precision used in electrical testing laboratories for the measurement of current, E. M. F. resistance, capacity and inductance. A careful study is made of the standard cell and primary and secondary batteries. An exhaustive study is made of the magnetic behavior of iron. Lectures, recitations and laboratory. First semester. Five hours.

**Physics 6. Heat and Light.** The theory covering the first and second laws of thermodynamics and a large number of problems are studied in the class room. The laboratory work covers the mechanical equivalent of heat; calorimetry, in which the heat value of solid, liquid and gaseous fuels is determined; a careful study is made of electrical methods for measuring temperature. In Light, the student becomes familiar with the spectrometer, spectroscope, interferometer and photometer. Students in Chemical Engineering are required to map emission spectra, study the arc and spark spectra of solids, the spark and flame spectra of liquids and gases, and the absorption spectra of mixtures and coloring materials. Students in Electrical Engineering are required to make a careful study of the efficiency of the various types of electric lamps.

All work in the laboratory is supplemented by written reports in which both general and theoretical results obtained are discussed. These reports afford the basis for criticism of the work. Recitations, lectures and laboratory.

Second semester. Five hours.



## ROMANCE LANGUAGES

Professor Griffith, Associate Professor Sloan, Assistant Professor  
Boland and Mrs. Rockwell

## FRENCH

1. **Elementary Course.** Grammar, easy reading, practice in writing French. First semester. Three hours.
  2. **Grammar, Reading, Practice in Writing French.** Second semester. Three hours.
  3. **French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Increasing use of French as the language of the classroom in this and succeeding courses. First semester. Three hours.
  4. **French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Second semester. Three hours.
  5. **Literature of the Seventeenth Century.** Advanced Composition. History of French literature. First semester. Three hours.
  6. **Literature of the Seventeenth Century, continued.** Advanced composition. History of French Literature. Second semester. Three hours.
  7. (a) **Eighteenth and Nineteenth Century Authors.** Romanticists and Realists. First semester. Three hours.
  7. (b) **French Civilization.** Rapid reading, lectures, reports. First semester. Three hours.
  8. (a) **Present Day French Writers.** Second semester. Three hours.
  8. (b) This course is arranged especially for those preparing to teach French. Second semester. Three hours.
- Open only to those who have completed Course 7a or 7b.

## SPANISH

1. **Elementary Course.** Aims to train the student to pronounce correctly, to understand, and to use easily the simpler forms of spoken and written Spanish and to give him a small working vocabulary. First semester. Three hours.
2. **Continuation of Course 1.** Introduction to grammar. Reading of simple prose. Conversation and written composition. Spanish is the language of the class-room in Spanish 1 and 2. Second semester. Three hours.
3. **Prose Narratives.** These selections illustrate Spanish life and



surroundings. Study of grammar and idiom. First semester. Three hours.

**4. Modern Novels.** Two or three short novels are read for content. Translation of selected passages. Study of more difficult grammatical problems and idiom. Introductory lectures in the history of Spanish literature. In the second semester, 1922, Alarcon and Valdes will be the authors read. Second semester. Three hours.

**5. Romantic Drama and Poetry of the 19th Century.** Typical works of Moratin, Hartzenbusch, Martinez de la Rosa, and Espronceda will be studied. Lectures on the history and characteristics of Romanticism in Spain. First semester. Three hours.

This course alternates with Course 7, and is offered in the odd-numbered years.

Prerequisite: Spanish 4.

**6. Nineteenth Century Novel.** Typical works of Galdós, Pereda, Fernán, Caballero and Blasco-Ibáñez will be read. Second semester. Three hours.

This course alternates with Course 8, and is offered in the even-numbered years.

Prerequisite: Spanish 5 or 7.

**7. Golden Age Drama.** Lope de Vega, Tirso de Molina, and Calderón de la Barca will be read by the class, with outside reading and reports by individual members. First semester. Three hours.

This course alternates with Course 5, and is offered in the even-numbered years.

Prerequisite: Spanish 4.

**8. Golden Age Prose.** Selections from the works of Cervantes and selected picaresque novels will be read. Second semester. Three hours.

This course alternates with Course 6, and is offered in the odd-numbered years.

Prerequisite: Spanish 5 or 7.

## SOCIOLOGY AND LOGIC

Professor Martin

**2. Anthropology, Descriptive and Physical.** Sophomores. Second semester. Three hours.

**3. Logic, Deductive and Inductive.** Juniors. First semester. Three hours.

**4. Municipal Sociology.** Juniors and Seniors. Second semester.

Three hours.

Alternating with Course 6.

**6. Scientific Method, Principles and Analysis.** Juniors and Seniors.

Second semester. Three hours.

Alternating with Course 4.

**7. Sociology, Principles and Theory.** Juniors and Seniors. First

semester. Three hours.

## SURVEYING

Professor Drum

**1. Plane and Topographical Surveying.** Recitations on text, lec-

tures, tests, field practice in each position on corps using transit, Y, dumpy and hand levels, plane table and compass in surveys for area, for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments.

Civil Engineering Course. Sophomores. First semester. Five hours.

**2. Geodetic Surveying.** Recitations on text, lectures, tests, readings and reports from literature of the U. S. C. G. S. and other sources.

Civil Engineering Course. Sophomores. Second semester. Two hours.

**4. Railroad Surveying.** Recitations on text, lectures, tests. Computation, draughting and field practice of simple, compound and spiral curves. Field practice in each position on corps making a preliminary survey for a cross-country railroad. Computations and draughting for determining paper location, including grades, excavation, vertical curves, questions of haul, etc. Field practice in putting in paper location and setting slope stakes. An inspection of portions of the Reading and Pennsylvania tracks in a study of switches, Y's, and crossings.

Civil Engineering Course. Sophomores. Second semester. Five hours.

**5. City and Mine Surveying.** Standard practice in field and office methods in surveys incidental to city and mine work is given. Problems include simple triangulation and base line work, underground and night surveys in carrying azimuth into mine, locating boreholes, driving tunnels, lining up chambers, etc. Problems are solved graphically, trigonometrically and analytically and solutions verified in the field.

Civil Engineering Course. Juniors. First semester. Three hours.

**6. Surveying.** Course for technical students not of the Civil Engineering Course. Recitations on text, lectures, tests. Field practice in the care, adjustment and use of surveying instruments, in surveys for area, topography, curve location, setting grade stakes, building location, foundations for machinery, etc. Computations and maps. Seniors. Second semester. Three hours.

## PHYSICAL EDUCATION MEN

Mr. Glass

The Tustin Gymnasium has been provided for the physical training and development of young men. This is now provided with the apparatus usually found in well-furnished gymnasiums. The Director of the Gymnasium examines every student, taking and recording in a book his physical measurements, and prescribes such exercise as may be required for his physical development. Regular exercise in the Gymnasium is required of the Sophomores and Freshmen.

## WOMEN

Miss Walton

Physical training is required of all women in the College and of all music students who live at Women's College. The course aims to give systematic, progressive exercises which tend to better the health of the students, and to give them grace and muscular co-ordination. Swedish gymnastics, calisthenics, light apparatus work, folk-dances, and games are taught in four half-hour periods each week.

The gymnasium is equipped with wands, dumb-bells, rings, Indian clubs, pulley weights, Swedish boom, and flying rings. There are basketball and volleyball courts and equipment for indoor baseball. Outdoor sports are taught and encouraged, including tennis, skating, and swimming.

All women are given two physical examinations each year to discover any physical weakness and to prescribe individual exercises to be practiced each day. There is ample equipment in the gymnasium for these examinations.

## EXPENSES OF STUDENTS PER SEMESTER

### Men

Tuition and General Expenses for students not residing in the dormitories.....	\$ 90.00
Unfurnished room, including heat and light.....	15.00
Furnished room, including heat, light and service..	30.00
Extra charge for corner rooms and double rooms ...	3.00
Student Budget.....	8.00

### Women

Tuition and General Expenses for students not residing in the dormitories.....	90.00
Board .....	100.00
Furnished room, including heat and light.....	30.00
Extra charge for rooms in Bucknell Cottage and New Residence Hall .....	7.50
Student Budget.....	8.00

General Expenses include such charges as those for the heating, lighting and use of halls, recitation rooms and the Library. Tuition is rated at \$50 per annum.

The Student Budget is intended to cover charges for various student activities and organizations.

### Department Fees

Biology 6, 9, 13, 14, 25, 26, 28, 29, 30 .....	\$ 5.00
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Biology 1, 2, 7, 8, 15, 19, 21, 22.....	10.00
Biology 10, 12.....	10.00—20.00
Chemistry 1, 3, 5, 7, 9, 10, 12 .....	5.00
Chemistry 2, 4, 6, 8, 13, 14, 15, 21, 22, 23, 24, 27, 28 ....	10.00
Chemistry 17, 18, 19, 20, 29, 30 .....	15.00
Chemistry 35, 36 .....	Special
Chemistry—Deposit .....	10.00
Electrical Engineering 1, 2, 9 .....	5.00
Electrical Engineering 5—Deposit .....	5.00
Home Economics 11 .....	2.00
Home Economics 12, 14, 16 .....	5.00
Mechanical Engineering 9 .....	3.00
Mechanical Engineering 2, 12 .....	4.00
Mechanical Engineering 7 .....	5.00
Mechanical Engineering 13, 14 .....	6.00
Physics 1a, 2a .....	3.00
Physics 3a, 4a .....	4.00
Physics 5, 6 .....	5.00
Surveying 1, 4, 5, 6 .....	5.00

### SPECIAL FEES

Enrolment Deposit.....	25.00
Enrolment Deposit—Non-resident Graduate.....	15.00
Room Deposit.....	10.00
Graduation Fee for all degrees.....	15.00
Extra Hour.....	6.00
Semester Hour—Non-resident Graduate.....	3.00
Late Registration.....	3.00
Changed Registration.....	1.00
Special Examination.....	3.00

### Extra Hour

For each semester hour in excess of the minimum semester requirement for the degree for which a student is

registered, a special fee of Six Dollars is charged if this extra hour is counted toward a degree.

### **Room Deposit**

Every student who applies for a dormitory room is required to make a deposit of Ten Dollars when the room is assigned and this amount will be credited on the bill of the next semester.

It is understood that the room is engaged for the whole of the College Year.

Should a student for good reason be unable to enter or to return, the deposit will be refunded provided notice is sent to the Registrar not later than four weeks before the opening of the year for which the amount was credited.

### **Payments**

A deposit of \$25 for a resident student must be made at the time of enrolment before admission to any classes and the balance of the bill must be paid within thirty days after the beginning of the semester. A deposit of \$15 must be made by each non-resident graduate student at the time of enrolment.

Any student who withdraws voluntarily while in good standing, not more than two weeks after the opening of the semester, shall be entitled to a refund of ninety per cent. of his dues for the semester.

Any student who withdraws voluntarily while in good standing after having been in attendance more than two weeks shall be charged for two weeks in excess of the time actually enrolled.

No refund is made to any student who is requested to withdraw on account of conduct or poor scholarship.

### **Dormitory Rooms**

An unfurnished room in a men's dormitory contains a bed six feet by three feet.



A furnished room in a men's dormitory contains a bed six feet by three feet, a mattress, two sheets, counterpane, pillow, pillow case; wardrobe, commode, table, two chairs, and a rug. The room is cared for and the bedding is laundered.

A furnished room in a women's dormitory contains a bed six feet by three feet, a mattress, bureau, commode, wardrobe, table, two chairs and a rug.

# GENERAL REGULATIONS

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## Attendance

Regular attendance is required upon all work in a student's course of study and at the Chapel exercises. Absences, in excess of a limited number, necessarily affect the class standing of a student. The details of the regulations in regard to absences are prescribed by the Faculty Committee on Attendance and Standing.

## Standing

The standing of a student in each course is computed on a scale of 100 and is so reported to the Dean's Office. The report, which is sent to parent or guardian, is recorded by use of the letters A, B, C, D, E, F, I, N, and Abs. A, signifies a standing from 90 to 100; B, signifies a standing from 80 to 89; C, signifies a standing from 70 to 79; D, signifies a standing from 60 to 69; E, signifies a standing from 50 to 59 and a condition; F, signifies a failure; I, signifies incomplete and no requirement of a second examination; N, signifies incomplete class room work and unsatisfactory final examination; Abs., signifies absence from final examination.

## Degrees With Distinction

The Degree of Bachelor of Arts or of Bachelor of Science **with distinction** is awarded as follows:

Cum Laude. A candidate is recommended for a degree Cum Laude who has obtained a grade of "A" in one-half of his courses.

Magna Cum Laude. A candidate is recommended for a degree Magna Cum Laude who has obtained a grade of "A" in three-fourths of his courses.

Summa Cum Laude. A candidate is recommended for a degree Summa Cum Laude who has obtained a grade of "A" in seven-eighths of his courses and who has been in residence at Bucknell University at least three years.

### Examinations

The dates of examinations are given in the Calendar. In case a student fails to be present at the examination of his class, for any justifiable reason, his examination will be held at such time as the Faculty may appoint, but in no case is an examination granted a student in advance of the time appointed for the examination of the class.

Unless for very good reasons to the contrary, a student who is granted a special examination will be required to pay a fee of three dollars therefor.

### Public Worship

The College holds religious service in Bucknell Hall. The student body is divided into two sections; each section meets twice a week.

The Women's College holds also an evening service in the Main Building of the Women's College.

### Government

It is assumed that all who enter upon the courses of study in the College do so for the purpose of acquiring an education. The atmosphere of the institution is not that of arbitrary restraint, but of reasonable conformity to reasonable requirements. The College does not wish to place its stamp or bestow its honors upon any one who is not willing to deport himself as a gentleman. Each student is distinctly placed upon his manhood, and if he abuses his privileges, after reasonable caution, he must withdraw from the institution, at the request of the Presi-

dent. Consistent with this ideal the students, with the sanction and cooperation of the Faculty, have organized the Senior Council composed of College men, and the Student Government Association composed of College women. Their function is to cooperate with the Faculty in maintaining the traditions and good order of the College both on and off the campus.

### **Office Hours—The President**

The President of the University is in his office in the Main College building each morning from nine to ten, if possible. Students are at liberty to call upon him at his home at any time.

### **Office Hours—The Dean**

The Dean is in his office in the Main Building at specified hours. He also meets students by special appointments.

### **Office Hours—The Dean of Women**

The Dean of Women will meet in her office College women who may desire advice or assistance from her.

### **Office Hours—The Registrar**

The office is open during the week 8:30 A. M. — 12 M., and 1:30 P. M. — 5 P. M. The Registrar will meet students for consultation at his office.

## PRIZES

The prizes are awarded to the persons who in the judgment of the several committees attain the highest degree of excellence among the respective competitors, but no prize is bestowed unless a high degree of merit has been attained by the person receiving it.

### **The Prize of the Class of 1871**

This prize, established by the Class of 1871, is awarded to the student of the Freshman Class who shall prove himself best prepared for College in the two branches, Latin and Mathematics.

The prize was awarded in 1921 to Ebenezer David Williams.

### **The Freshman Declamation Prize**

A prize is awarded to the member of the Freshman Class who shall excel in declamation at the Annual Contest of the Freshman Class.

The prize was awarded in 1921 to Ebenezer David Williams.

### **The Sophomore Prize in Public Speaking**

A prize is awarded to the member of the Sophomore Class who shall excel in public speaking at the Annual Contest of the Sophomore Class.

The prize was awarded in 1921 to Willard Douglas Callender.

### **Declamation Prizes for Women**

Prizes for the best declamation are open for competition to the Sophomore and Freshman Classes. The prize for the Freshman Class was awarded in 1921 to Jessie Read Wendell.

The prize for the Sophomore Class was awarded in 1921 to Aravilla Anna Peters.

### **The Gretzinger Prize**

In honor of William C. Gretzinger, A.M., the first Registrar, the University offers a prize to that member of the Junior Class who shall pronounce the best oration at the Junior Exhibition in Oratory.

The prize was awarded in 1921 to William Herbert Sugden. A collateral prize was awarded in 1921 to Jennie Burke.

### **The Junior Debate Prizes**

Prizes are awarded to the two members of the Junior Class who evince superiority in debate at the Junior prize contest. No exhibition was held in 1921.

### **The Herbert Tustin Prizes**

In memory of his deceased son, the late Professor Francis Wayland Tustin, Ph.D., of the Class of 1856 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Tustin Prize Fund, the interest of which is to be forever paid annually as two prizes, in the proportion of fifteen dollars for the First Prize, and ten dollars for the Second Prize, to the two students of the Senior Class who shall have attained the highest and the second highest standing in Psychology and Ethics (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception".

The first prize was awarded in 1921 to Kathryn Pfenniger Spotts, and the second to Ella Bolton Osbourne.

### **The Herbert Goodman Barrows Prize**

In memory of his son, the Reverend William Barrows, A.M., of the Class of 1867 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Goodman Barrows Prize Fund, the interest



of which is to be forever paid annually as two prizes of equal amounts to the student or two students of the Senior Class who shall have attained the highest standing, respectively, in the Latin and in the Greek language and literature (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception”.

The prize for excellence in Latin was awarded in 1921 to Marjorie Bernice McCoy. The prize for excellence in Greek was awarded in 1921 to David Hobart Evans.

### **The Chaplain J. J. Kane Prize**

The Reverend James J. Kane, A.M., Chaplain in the United States Navy, and a graduate from the Theological Department of this University, of the Class of 1867, established a prize which is to be given annually to that member of the graduating class who delivers the best oration on Commencement Day.

The prize was awarded in 1921 to David Hobart Evans.

### **The Bucknell Prizes for Women**

The following prizes for women were founded by William Bucknell, of Philadelphia.

1. A Senior Prize to be awarded to the member of the graduating class of the College, who shall attain the highest grade in the studies of the four years' College Course.

The prize was awarded in 1921 to Dorothy Marie Spangler.

2. A Senior Prize, to be awarded to the member of the graduating class who, being excellent in scholarship during the Senior Year, shall prepare the best essay.

The prize was awarded in 1921 to Esther Virginia Dodson.

3. A Junior Prize, to be awarded to the member of the Junior Class, who, being excellent in scholarship during the Junior Year, shall prepare the best essay.

The prize was awarded in 1921 to Marie Josephine Chambers.

4. A Sophomore Prize, to be awarded to the member of the Sophomore Class who, being excellent in scholarship during the Sophomore year, shall prepare the best essay.

The prize was awarded in 1921 to Elinor Solly Hanna.

5. A Freshman Prize, to be awarded to the member of the Freshman Class who, being excellent in scholarship during the Freshman year, shall prepare the best essay.

The prize was awarded in 1921 to Lillian Elizabeth Greenland.

The fund consists of \$2,000, the income from which is to be devoted to these prizes annually in a manner more particularly defined in the donor's communication to the Trustees.

Themes for the Bucknell Essay Prizes will be drawn from works which will be announced by the Professor of Rhetoric each year.

## SCHOLARSHIPS

**General Regulations.** Scholarships under the control of the University are held subject to the following regulations:

1. Application for a scholarship for any college year should be made before the first of June of the preceding year.
2. Scholarships are held subject to semi-annual renewal, the renewal being conditioned upon the maintenance of an average grade of 80, the continuance of good behavior and the assurance of continued financial need.
3. Credit for half the amount of the scholarship is given at the beginning of each semester.
4. A Permanent Committee on Scholarships, consisting of the President, the Dean, and the Registrar, has charge of all awards.

### FUNDED SCHOLARSHIPS

1. The William Bucknell Scholarships, twenty in number and of \$1,000 each, were established for the purpose of aiding worthy young men in securing an education with which to increase their usefulness in life. The income from the fund is to be paid annually to twenty young men, in accordance with rules which will be made known upon application to the committee.

2. The Longan Scholarship was established by a legacy of O. W. Longan, Esq., and is available for a student for the ministry from Lycoming County, Pennsylvania.

3. The Lewis E. Jones Scholarship was established by a legacy of the late Lewis E. Jones and is available for a student of Welsh descent.

4. The John Howard Hare Scholarship was established by the Reverend Calvin Aurand Hare, A. M., in memory of his son, John Howard Hare, and is available for a student for the ministry upon recommendation of the Pennsylvania Baptist Education Society and of the President of the University.

5. The Velola E. Hall Scholarship was established by the Reverend Henry Chandler Hall, A. M., Class of 1882, in memory of his daughter, Velola E. Hall, A. B., Class of 1904, and is available for a student in the Women's College.

6. The William V. Wilson Scholarships, two in number, were established in memory of the Reverend William V. Wilson, D. D., of New Jersey.

7. The Esther Owens Scholarship was established by a gift of Miss Esther Owens.

8. The William Albion Cook Scholarship was established by Mrs. Augusta M. Cook in memory of her son, William Albion Cook, Class of 1899, and is available for a student in the Men's College.

9. The Weaver Scholarships were established by a fund of \$10,000, the Gift of Colonel Joseph Kerr Weaver, A. M., M. D., Class of 1861, and were named by action of the Board of Trustees in honor of Doctor and Mrs. Joseph K. Weaver. These scholarships are available under the rules and provide \$150 each for three students.

10. The Ministers' and Missionaries' Children Scholarships are established upon the general foundation for the benefit of the children of ministers and missionaries in active service without distinction as to religious denomination.

11. The Livingston Scholarships, twenty-two in number, established by a legacy of M. B. Livingston, and the Farwell Scholarship, established by Samuel S. Farwell, are

available for students of the ministry designated by the Pennsylvania Baptist Education Society.

12. The Franklin Mathews Service Scholarships, forty in number, were established by Dr. Franklin Mathews, Class of 1868. They provide \$50 each in return for which service is required to the amount of the scholarship.

13. The Jack Culberson Kress Service Scholarships, ten in number, provide \$50 each in return for which service is required to the amount of the scholarship.

14. The Philadelphia Alumnae Scholarship was founded by the Philadelphia Alumnae Club, and is available for a woman student from Philadelphia designated by the Club.

### THE LOAN FUND FOR WOMEN

In June, 1887, there was organized a society for the purpose of assisting young women of limited means to obtain an education. A fund was established by gifts from Alumnae and friends, and is controlled by an Executive Board.

The money is loaned to worthy young women who obligate themselves to return it without interest as soon after graduation as they may be able.

Applications for loans should be made to the Executive Board before the opening of each semester. No loans are granted until the applicant has been a student in the College for at least one semester.

Contributions to the Fund are solicited and should be sent to the Treasurer, Mrs. J. T. Judd, Lewisburg, Pa. A contribution of one hundred dollars constitutes the donor a Life Member of the Society.

Information will be given by the President, Mrs. Katherine B. Larison, Lewisburg, Pa., or by the Secretary, Mrs. Llewellyn Phillips, Lewisburg, Pa.



# COLLEGE ACTIVITIES

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## REGULATIONS

The College encourages and directs all activities consonant with the normal life of college students. The Faculty, therefore, has appointed a committee on student activities and has defined its duty to be:

(1) to supervise the accounting and to audit the accounts of all college organizations, non-fraternity in nature, that collect and disburse funds and whose management is not controlled by the Board of Trustees,

(2) to pass upon the scheduling of all public activities of organizations of the College not controlled by the Board of Trustees and to pass upon the scholastic eligibility of students participating in all public activities.

The treasurer of any college organization, class or committee is required to submit his accounts for audit to the committee at least once a year or as frequently as requested by the committee.

Before any public activity of those student organizations under the jurisdiction of the committee on student activities is scheduled, application for permission and a date must be made in writing to the committee. The committee on student activities has the right to prohibit a student from participating in any public activity whenever, in the opinion of the committee, such participation is detrimental to his college work.

## ATHLETIC ASSOCIATION

The Athletic Association of the College has been formed to encourage and regulate athletic sports. This Association in all its activities is subject to Faculty regulations and supervision, but considerable liberty is allowed it in carrying out its purpose. The usual intercollegiate sports are



fostered, and match games are arranged with other colleges. The general management of athletics is in the hands of a committee, consisting of the President of the Athletic Association, the President of the University, ex officio, two faculty members, chosen by the faculty or appointed by the President of the University, and twelve alumni, appointed by the Board of Trustees. The business management of the Association is in the hands of a graduate manager.

### CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association aims to maintain religious ideals and to promote religious knowledge among the men of the College. It holds regular devotional meetings and conducts Bible and mission study classes.

The Young Women's Christian Association holds regular meetings on Tuesday evenings. It aims to maintain a religious atmosphere in the Women's College and it also conducts Bible and mission study classes.

### CLASS ORGANIZATION

Each class is organized with a president and the other usual officers. The classes meet for the election of officers on the first Friday of the College year at three o'clock in the afternoon. The officers thus elected serve for one year or until their successors qualify.

### DEPARTMENT CLUBS AND SOCIETIES

The medical students have organized a Medical Society. The Department of Mathematics has organized the Bucknell Mathematics Club. Other departments have similar organizations. The Civil Engineering, the Chemical Engineering, the Electrical Engineering, and the Mechanical Engineering students have their respective societies. The last two are branches of national societies and

hence local members are accorded the privileges of the national bodies. All these organizations hold regular meetings. Members present original papers and at times lecturers of prominence address the societies.

## **DRAMATIC, LITERARY, AND MUSICAL ORGANIZATIONS**

The young women of the College have established the Frill and Frown, the young men the Cap and Dagger. Both of these dramatic organizations present each year at least one play. There is also a national dramatic fraternity, Theta Alpha Phi.

There are an association for the promotion of Inter-collegiate Debating, and a national debating fraternity, Tau Kappa Alpha.

The Lyceum has been organized to promote expression in art and literature.

There are two Glee Clubs; one composed of young men, the other of young women. They hold regular rehearsals and give concerts at the College and in adjacent cities. During the vacations the Glee Club composed of young men makes tours.

## **FRATERNITIES**

No student is permitted to join a fraternity until he has received a certificate from the President of the University, under seal, that he has been a student for one year in the College, that he has completed one year's work and that his conduct has been satisfactory. However, a student who has completed one year's work at another college may join

a fraternity at the close of the first semester, provided his conduct has been satisfactory.

### STUDENT PUBLICATIONS

The students of the College publish a weekly paper, the *Bucknellian*, a quarterly magazine, *The Mirror*, and also a daily *Commencement News* during Commencement Week. The Junior Class publishes every year an annual, *L'Agenda*; the Y. M. C. A., *The Handbook*.

# SEVENTY-FIRST ANNUAL COMMENCEMENT

Wednesday, June 15, 1921

## DEGREES AWARDED

### Bachelor of Arts

Lester Kelly Ade	Hannah Farr Madison
Edna Mary Baker	Edna Martin
Mary Elizabeth Beirne	Carl Adam Metz
Lydia Coene	Katherine Miller
Clarence Anderson Davis	Ruth Lillian Mount
Elizabeth Lillian Davis	Irene McAllister
Esther Virginia Dodson	Marjorie Bernice McCoy
Homer Titus Eaton	George Besold Nesline
David Hobart Evans	Ella Bolton Osbourn
Hattie Cole Fertig	Francis Fess Reamer
Arthur Earl Harris	Rachel Mary Reed
Ethel Mae Hoffman	Verna Lois Smith
Luther Paul Ilgen	Dorothy Marie Spangler
James Milton Lord	Frank Thompson Taylor
Marguerite Theresa Lotte	Lulu Clare Tyson
Ralph Emerson Wilkinson	

### Bachelor of Philosophy

Elizabeth Van Scoyoc Weidner

### Bachelor of Science

Nelle Wolfe Aumiller	Martha Leiser
Vincent Arthur Baldauf	Dorothy Amelia Lent
Matilda Eliza Bell	Thomas James Mangan
Sarah Musser Bernhardt	Winfield Scott Masters
Charles Franklin Brandt	Francis Patrick McDermott
Richard Theron Carvolth, Jr	Dorothy Conrad Meixell
Hilda Dixon Coates	Arthur Enoch Paulhamus
Emily Kathryn Devine	Alexander Rexford Roller
Catherine DeEtte Edgett	Nelson Samuel Rounsley

Anna Gladys Fairchild  
 Grace Rau Follmer  
 Emma Magdalena Fuhrer  
 Katherine May Fulford  
 Albert Leslie Gandy  
 Elizabeth Dunbar Groff  
 Robert Paul Hartz  
 Richard Roy Heckart  
 James Bigger Hutchison  
 Sarah Anna Kerstetter  
 Denzil King

Thaddeus Anthony Salaczynski  
 Roy Williams Sauers  
 George Jay Bevier Schuyler  
 Harold Lawson Shimer  
 Ellis Sargeant Smith  
 Roswell Oscar Barnett Smith  
 Kathryn Pfenninger Spotts  
 Alfred Tennyson Steininger  
 Cora Elsie Watson  
 Thomas Stuart Williams  
 Kenneth Carlyle Winsor

### Bachelor of Science in Biology

Clara Margaret Casner  
 Thomas Raymond Dorris  
 Alden Park King

William Wallace Lewis  
 Herman Deane Schultz  
 David Hadden Stewardson

Harry Vernon Thomas

### Bachelor of Science in Chemical Engineering

Robert Walter Angstadt  
 George Hobart Brown  
 John Packer Haas Carter  
 Victor Gordon Clare  
 Herbert Nathan Derr  
 Merrill Brown DeWire  
 Walter Pierson Edwards

Harold Spencer Eisley  
 Alan Richard Haus  
 Grant Oswald Herb  
 Simon Cameron Burnsides Holter  
 Clarence Byron Moore  
 Selah Wood Sutton  
 Stephen James Wargo

John Lee Yarnall, Jr.

### Bachelor of Science in Civil Engineering

Charles McKnight Bashore  
 George Harold Beattie  
 Stuart A. Epler  
 John Craig Finnegan

John Augustus Gray, Jr.  
 James Leo Hess  
 Russell Foulke Keller  
 Franklin Schreyer Townsend

### Bachelor of Science in Electrical Engineering

Holmes Tomlin Douglass  
 Edward Fielding Heim  
 Elvin LaRue Kohler  
 Voris Albert Linker

Floyd Kline Mayhood  
 Thomas Simon Morgan, Jr.  
 William Edgar Nichols  
 Chelton Winthorff Smith

Leonard F. Worthington

**Bachelor of Science in Mechanical Engineering**

Luke Reynolds Bender	Hilding Alfred Larson
Robert Leon Hulsizer	John Russell Lowman
Eugene Kallay	Richard Armstrong Mason
Clarence Hoffman Key	Martin Keller Mohler
Stanford LaRue Kunkle	Aelred Leo Quinn
Donald Seeder Laher	Charles Henry Rieckenburg
Howard Carl Shelly	

**Bachelor of Science in Home Economics**

Barbara Helen Coe	Freda Crowl Mackereth
Marguerite Nancy Coe	Charlotte Walton Siple
Lottie Noreene Dietz	Marjorie Elizabeth Sprout
Ella LaRue Unger	

**Master of Arts**

Samuel Guy Alter, B.A.	Clair Gephart Groover, B.Ph.
Mary Magdalene Bubbs, B.A.	Otto Carl Ferdinand Janke, B.A.
Ralph Frederick Davenport, B.Ph.	George Loxley Lowry, B.S.
Emily Rebekah Ebling, B.A.	Harold William Musser, B.S.
John Steiner Gold, B.S.	Gertrude Lillian Turner, B.A.
Samuel Garber Williams, B.S.	

**Master of Science**

Isabelle Frances Bond, B.S.	Irvin Valentine Holmes, B.S.
William Thomas Ungard, B.A.	

**Master of Science in Biology**

Robert Leon Bucher, B.S.	Harold Edward Miller, B.S.
Samuel Dale Spotts, B.S.	

**Master of Science in Chemical Engineering**

Maurice Bacon Cook, B.S.	Merrill Brown DeWire
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**Master of Science in Electrical Engineering**

Ernest Wellington Hewitt, B.S.	Henry Clay Lucas, B.S.
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**Master of Science in Mechanical Engineering**

Benjamin James Wilson, B.S.

**Civil Engineer**

Ralph Elliott, B.S.



**Electrical Engineer**

George Allison Irland, B.S.

**Mechanical Engineer**

Lewis Frederick Lyne, Jr., B.S.

**DEGREES WITH DISTINCTION****Magna Cum Laude**

Lottie Noreene Dietz	Emma Magdalena Fuhrer
Catherine DeEtte Edgett	Marjorie Bernice McCoy
David Hobart Evans	Dorothy Marie Spangler
Frank Thompson Taylor	

**Cum Laude**

Lester Kelly Ade	Hannah Farr Madison
Clara Margaret Casner	Ella Bolton Osbourn
Lydia Coene	Francis Fess Reamer
Marguerite Theresa Lotte	Kathryn Pfenninger Spotts
Leonard F. Worthington	

**HONORARY DEGREES****Doctor of Laws**

Elizabeth de Quiroz, Countess de Santa Eulalia

**Doctor of Science**

Charles Parker Vaughan

**Doctor of Divinity**

Charles Alvin Brooks  
Joseph Chalmers Hazen  
Joseph Roberts Wood

**CERTIFICATES IN HOME ECONOMICS**

Mable Elizabeth Baker	Martha Louise Hood
Anna Marie Fisher	Edythe Susanne Statler

# STUDENTS

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## GRADUATE STUDENTS

Name	Address
Lester Kelly Ade	Williamsport
Holmes Tomlin Douglass	Cape May Court House, N. J.
Catherine De Ette Edgett	Olyphant
Stuart A. Epler	Reading
Voris Albert Linker	Williamsport
Harold Edward Miller	Lewisburg
Ruth Stein	Lewisburg
Harry Redcay Warfel	Bogota, N. J.

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## SENIORS: CLASS OF 1922

Name	Address
Alexander Aloysius Aleshouckas	Great Neck, N. Y.
John Detki Alexander	Philadelphia
Donald Cargill Allen	Lewisburg
Anna Kathryn Althouse	Wyomissing
Mary Elizabeth Appleman	Pittsburgh
Norman Roy Appleton	Philadelphia
William Westley Baird	Reedsville
Nellie Carrol Balliet	Nanticoke
Gordon Preston Bechtel	Reading
Fred Sturges Beers	Dalton
John Robert Beers	Dalton
Sanford Berninger	Mifflinville
Raymond Rearick Beyer	Bloomsburg
Ruth Hanna Brown	Ewan, N. J.
Eve Bolles Bunnell	Montrose
Ruth Ardelle Burgett	Homer, N. Y.
Jennie Burke	Bordentown, N. J.
Phillip Clarence Campbell	Danville
Ivar Carl Carlson	Port Allegany
Marie Josephine Chambers	Nanticoke
Willard Henry Collins	Baltimore, Md.
Florence Dorothy Cornwell	Plainfield, N. J.

Name	Address
Elizabeth Couffer	Harrisburg
George Raymond Crawford	Mifflinburg
Edward Craver Crowl	Elysburg
Forest Franklin Dagle	Northumberland
Howard Thomas Davenport	Plymouth
Dearle Faye Davis	Allenwood
Dorothy Luana Davis	Berwick
Nelson Fithian Davis, Jr.	Lewisburg
Phoebe Beatrice Davis	Olyphant
William Powell Day	Brookside
William LeRoy DeHaven	Duncannon
Chester Henry Derck	Trevorton
Lillian Jane Derr	Turbotville
Leona Sophia Dickrager	Tionesta
Charles Emory Diffendafer	Nanticoke
Charles Raymond Dwyer	Pottstown
Myra Catharine Effinger	Altoona
Richard Kempton Estelow	Mt. Holly N. J.
Margery Genea Farley	Mifflinburg
Esther Marie Fleming	Nutley, N. J.
Harold Gustav Florin	Johnsonburg
Edna Mae Follmer	Milton
Frederick Alfred Foxall	Wilkes-Barre
Grace Carver Fry	Duncannon
Walter Denton Galbraith	Johnstown
Arthur Funk Gardner	Harrisburg
Mark Kuebler Gass	Sunbury
Bright Ellsworth Greiner	Winfield
Lewis Gene Griffiths	Scranton
Robert John Haberstroh	Scranton
Ralph Franklin Hartz	Reading
George Webster Haupt	Sunbury
Hulda Dorothea Heim	Williamsport
Eloise Ernestine Hill	Williamsport
Wade Ferguson Hoffman	Vandergrift
William Alexander Hoffman, Jr.	Chadd's Ford
Isaac Humphrey	Nanticoke
William Jackson Irvin	Lewisburg
Carmault Benjamin Jackson	Woodstown, N. J.
William Spencer Johnson	Harrisburg
Helen Louise Johnston	Altoona

Name	Address
Finley Keech	Netcong, N. J.
Arnold Oakley Kenyon	Doylestown
Oliver Linton King	Quakertown
Ruth King	Muncy
Harriet Pauline Kinsman	Plymouth
Angeline Ruth Kissinger	Reading
Helen Felicia Kitlowski	Nanticoke
Adam Alfred Klein	Wilkes-Barre
Leander Swartz Klingman	Sunbury
Karl Krug	Reading
Emma Lilian Kunkle	Newberry
Hugh David Kytte	Nanticoke
Elizabeth Laedlein	Williamsport
Roy Horst Landis	Union Deposit
Harry LaBerte Lapp	Trenton, N. J.
Lawrence Winters Lawson	Latrobe
Robert Earl Lepperd	Duncannon
Isaac Levine	Paterson, N. J.
William Curtis Litterer	Danville
Welles Norwood Lowry	Carbondale
Reba Eva Mackenthum	Philadelphia
Corinne MacNamara	Thompson
George Mathieson	Munhall
Earl Balliet Mickley	Coplay
Emerson Ralph Miller	Ephrata
Howard Harrison Moore	Reynoldsville
James Frederick Moore	Milton
Effie Muir	Morristown, N. J.
James Gillaspy Myerly	Wilkes-Barre
Phillip Edgar Opp	Muncy
Mary Rachel Park	Montandon
Stewart Ungo Patton	Parker's Landing
Harry Immanuel Peterson	Jersey Shore
Kathryn Davis Pettigrew	Olyphant
Susanna Harris Plummer	Quinton, N. J.
Grace Poust	Muncy
Janice Raikes	Philippi, W. Va.
Robert Harold Reitz	Trevorton
Ethel Reba Richardson	Reading
William Jennings Rinebold	Athens

Name	Address
Samuel Perry Rogers	Jeffersonville
Evan Willis Ross	Latrobe
Harry Edward Schaffer	Chambersburg
Paul George Schmidt	Reading
Ray Pauline Seaman	Lewisburg
Marvin Ayres Searles	Morristown, N. J.
Amorita Muriel Sesinger	Pitman, N. J.
Mary Eldridge Sholl	Burlington, N. J.
Grover Russell Short	Lebanon
Donald Peter Smith	Flanders, N. J.
Ethelwynne Mae Smith	Lewisburg
Laura Louise Smith	Reading
Hugh Penn Sowers	Steelton
Catharine Young Stahl	Lewisburg
John Calvin Stahl	Lewisburg
Hannah Edith Steely	Lewisburg
Thomas Reber Stein	Sunbury
Louis Karl Stuntzner	Norwood, Mass.
William Herbert Sugden	Wilkes-Barre
Grace Matilda Swan	Altoona
Freeman Thayer Tingley	Dimock
Edwin Wesley Treadwell	Williamsport
Frances Edsall VanCleaf	Stockholm, N. J.
Stuart Mitchell Walter	Sunbury
Clara Wasilewski	Nanticoke
Paul Augustus Weaver	Reading
Edward George Wentzel, Jr.	Philadelphia
Herman Earnest Wiant	Huntington Mills
Robert Alfred Williams	Philadelphia
William Charles Arthur Willman	Mt. Carmel
Charles Imbrie Wilson	Jersey City, N. J.
Elmer LaRue Worthington	Eagles Mere

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### JUNIORS: CLASS OF 1923

Name	Address
John Alexander Ammerman	Dallas
Dorothy Auer	Norristown
Marian Ayars	Millville, N. J.

Name	Address
Mary Ethel Bailey	Latrobe
William Elwood Balliet	Milton
Leonard Clair Baldauf	Reynoldsville
Frank Stanley Bartosawicz	Mt. Carmel
Joseph Bossard Basinger	Johnsonburg
Constance Hunting Bennett	Glassboro, N. J.
Eugene Stoll Biddle	Muncy
Victor Augustin Bihl	Harrisburg
Olive Winfred Billhime	Turbotville
Charles Richard Birch	St. Clair
George Leonard Black	Williamsport
Arda Crawford Bowser	Ford City
Cornelia Ruth Boyd	Dover, N. J.
Jessie Kesson Brookes	Philadelphia
James Anthony Brown	Pittston
Cleon Ferris Buck	Hughesville
Charles Theodore Bunting	Trenton, N. J.
Ellsworth Eede Caldwell	Rochester, N. Y.
Harry Miller Calhoun	Port Allegany
Willard Douglass Callender	Thompson
Worthington Candrick	Olyphant
Lyell Carr	Conneautville
Almet Monroe Case	Waverly, N. Y.
Donald Bryan Cloward	Wilmington, Del.
Edmund Pearre Coe	Factoryville
Carlotta Harriet Conrad	Binghamton, N. Y.
Paul Bouynge Cooley	Carlisle
Bertha Ella Cupp	South Williamsport
Donald Arthur Dallman	Waverly, N. Y.
Frank Bernard Daniels	Wilkes-Barre
John Henry Daugherty, Jr.	Williamsport
Daniel Webster Davis	Nanticoke
Donald Alerdice Davis	Homestead
Frank Umstead Davis	West Chester
John Anderson Davis	Nanticoke
Robert Mitman Dawson	Watsontown
Harry Oscar Dayhoff	Steelton
Earl DeCoursey	Newtown
Ellis Warren Deibler	Shamokin
Eli Raymond Strunk DeTurk	Griesemersville
Margaret DeWees	Montrose



Name	Address
John Joseph Dietrich	Reading
Stella Domzalski	Nanticoke
Albin Joseph Drapiewski	Nanticoke
Willard Nesbit Durbin	Plymouth
Frieda Eva Ebner	Glassboro, N. J.
Gladys Emerick	Shamokin
Furman Harold Entz	LaPorte City, Iowa
Hazel Marie Farquhar	West Brownsville
Helen Jean Ferguson	Pittsburgh
Anna Marie Fisher	Reading
Elva Bearniece Flanagan	Pittsburgh
Howard Naugle Fry	Shillington
Lloyd Charles Fry	Montgomery
Joseph Harlyn Fulmer	Olean, N. Y.
Enoch Anthony Gdaniec	Mt. Carmel
Andrew Martin Gehret	Shillington
William George Gehring	Bridgeton, N. J.
Donald Joseph Gensemer	South Williamsport
Francis Howard Gibson	Wilkinsburg
Carl Frank Goerlitz	Scranton
Nevin Henry Grieb	Tylersville
Dalzell Melvin Griffith	Johnstown
Mary Elizabeth Grove	Lewisburg
Lucile Anita Gutelius	Mifflinburg
Byron William Hahn	Wilkes-Barre
Clair William Halligan	Ephrata
Elinor Solly Hanna	Philadelphia
Paul Edward Harding	Williamsport
Perilla Ravina Harner	Mt. Carmel
Jennie Margaret Harrington	Binghamton, N. Y.
Robert Joseph Hartlieb	Lebanon
Alford Herbert Haslam	Palmerton
Mildred Alice Hayden	Greensburg
Mary Gertrude Heilman	Oakmont
Jack Hellewell	Philipsburg
Miles Henninger	Shamokin
Walter Liddell Hill, Jr.	Scranton
Cyrus Hoffa	Wilkes-Barre
Daniel Walker Holloway	Troy
Frank Warren Homan, Jr.	Philadelphia
Florence Elizabeth Horam	Lewisburg

Name	Address
Lester Hipple Horam	Lewisburg
Anna Horoschak	Perth Amboy, N. J.
Harold Steiner Hunsicker	Petersburg, O.
Elizabeth Hurst	Norristown
Lewis Leroy Hutchinson	Reading
Richard Kelly Hutchison	Altoona
Charles Grover Hyman	Winfield
Marion Aleths Jack	Wayne, N. J.
Alfred Voris Jacobs	Danville
Jean Pearle Johns	Cresson
Harry Warren Johnson	Lewisburg
Anna Margaret Johnston	Altoona
James Hayes Jolly	Pittsville
George Hadfield Jones	Homestead
Harold Jones	Wilkes-Barre
Harry Walter Jones	Centralia
Frances Dorando Keough	Chester, N. J.
Helyn May Kerstetter	Lewisburg
Edith Leone Kieser	Milton
Lawrence Myron Kimball	Vineland, N. J.
Kathryn Chance Kimble	Vineland, N. J.
Stanley Vincent Kostos	Mt. Carmel
Jacob Henry Kutz	Douglasville
Anna Margaret Lees	Juniata
Ruth Ellen Leitzel	Lewisburg
Arlington Reuben Lewis	Palmerton
George Washington Lewis	Vineland, N. J.
Lawrence Delroy Lewis	Watsonstown
Harold Smedley Liddick	Lewisburg
Vivian Beatrice Livingston	Clearfield
Mary Louise Llewellyn	Frostburg, Md.
Kenneth Aldrich Lowry	Friendship, N. Y.
Vernard Elmer Lozier	Stanhope, N. J.
William Meredith Lybarger	Mifflinburg
Ransom George Lyons	Muncy
Paul Carew Mallay	Stanhope, N. J.
Robert Markowitz	Pottstown
Mario Valentine Martin	Coudersport
Harold Charles McGraw	Philadelphia
Everitt Samuel McHenry	Hazleton
John Harold Melhuish	Kingston

Name	Address
Charles William Miller, Jr.	Pittsburgh
Luther Frederick Miller	Lewisburg
Alice Pearl Minch	Tyler Hill
Benjamin Stanley Moore	Pitman, N. J.
Margaret Morgan	Blakely
Norman Watkins Morgan	Nanticoke
Dewey William Morrett	Steelton
Marion Delphine Murphy	Scranton
Natalie Elizabeth Musser	Lewisburg
Thomas Mckinley Musser	Mifflinburg
Katherine Lucille Owens	Lewisburg
Lloyd Custer Palmer	Johnstown
Frances Susan Post	Thompson
John Straw Purnell	Lewisburg
Frank Wesley Ransom	Dorranceton
Elmer Lee Reiter	Montoursville
George Reading Rentz	Williamsport
Ruth Adele Reuhl	Roselle, N. J.
Samuel Harmer Rickard, Jr.	Philadelphia
Andrew Long Rooney	Hollidaysburg
Robert Elven Ross	Ridgway
Lillian Russell	Wyalusing
David Arthur Sangston	McClellandtown
Geraldine Schmucker	Watsonstown
Elsie Donaldson Schuyler	Lewisburg
Martha Marie Shafer	Ridgway
Walter Blanchard Shaw	Lewisburg
Richard William Sheffer	York
Dorothy Broome Sholl	Burlington, N. J.
Pennell McCoy Shumaker	Sunbury
Jerome Francis Skehan	Reynoldsville
Margaret Elizabeth Smail	Williamsport
Bertha Louise Smith	Philadelphia
Donald Rylance Smith	Lewisburg
Nina Grace Smith	Dawson
Wesley Edward Smith	Altoona
James Jackson Snyder	Winfield
William Grant Snyder	Williamsport
George Washington Sour	Jersey Shore
Earl Emmanuel Sousley	Hamburg
Anna May Speare	Lewisburg

Name	Address
Harry Edward Stabler	Endicott, N. Y.
Jennie Ethleen Stackhouse	Lewisburg
Luke Lincoln Stager	Lebanon
Joseph Homer Steele	New Alexandria
Charles Leonard Steiner, Jr.	Uniontown
Frank William Summerfield	Philadelphia
Rupert Morris Swetland	Mills
Harold Womer Tench	Wilkes-Barre
Baden James Thomas	Nanticoke
Edna Tompkins	Paterson, N. J.
Charlotte Wilson Van Cleaf	Stockholm, N. J.
Harold Franklin Vandermark	Nanticoke
Alvin Snyder Wagner	Lewisburg
Kathryn Franian Wainwright	Lewisburg
James Howard Walter	Claysburg
Isabella Reinhardt Webster	Conshohocken
George Felter Wendell	Honesdale
Albert Leonard Wheat	Millville, N. J.
Hayden James White	Olyphant
Dorothy Frances Wilhelm	Williamsport
Foster Charles Wilson	Olyphant
Herbert Oscar Wilson	Pittston
George Carbon Wolfe	Williamsport
Glenn Wesley Wolfe	Milton
Russell Sheldon Wolfe	Point Pleasant, W. Va.
James Marcena Wood	Wilkesburg
William Guy Woodring	Reynoldsville
Frank Cort Wright	Latrobe
Corbin Weyland Wyant	Kittanning
Russell Decker Yearick	Nittany
Harry Ried Yiengst	Mahanoy City
Gail Borden Young	Plymouth

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## SOPHOMORES: CLASS OF 1924

Name	Address
Howard Edwin Ackman	Port Allegany
Grace Hope Allardice	Meshoppen
Franklin Davis Arnold	Lewisburg
Earl Jacob Axe	New Cumberland
Lamen Leroy Beck	Loganton
James Harold Beckley	Nanticoke
Morgan Noah Beech	Edwardsville

Name	Address
George Bellack	Johnstown
Louise Morgan Benshoff	Johnstown
Eleanor Ruth Berry	Mifflinburg
Charles Frederick Bird	Jeannette
John Cooper Bird	Shamokin
Dorothy Jane Bissel	Lewisburg
Glenn Richard Bower	Berwick
Henry William Bressler, Jr.	Sunbury
Edward Bridges	Palmyra, N. J.
Frank Henry Brown	Brookville
Mildred Alice Brown	Meshoppen
Mary Anna Brownmiller	Shoemakersville
Charles Kenneth Budd	Budd Lake, N. J.
John Dwight Butzer	Smethport
Earl Keays Carpenter	Jamestown, N. Y.
Tony Cavalcante	McClellandtown
Marcus Marcellus Chapman	Frankfort, Ind.
Jennie Elizabeth Clark	Mahaffey
Mildred Louise Clayton	Meshoppen
Mary Mildred Clower	West Chester
Kenneth Lorne Cober	Williamsport
Emile Coene, Jr.	Paterson, N. J.
Merle Greene Colvin	Forest City
Adolfo Concha-Goubert	Bogota, Columbia
Willis Dale Conn	Point Marion
Daniel Allen Copenhaver	Hershey
Malcolm Paul Crandell	Towanda
Charles Tice Crosier	Salem, N. J.
Rose Olive Curtis	Waymart
Elmer Custer	Johnstown
Florence Turner Dare	Bridgeton, N. J.
Ethel Muriel Davis	West Chester
Cecil Preston Dawson	Watsonstown
Ellis Roy Defibaugh	Wilkinsburg
Hilda Bernitice DeWitt	Sunbury
Iva Irene DeWitt	Sunbury
Charles Weiser Dinger	Reynoldsville
Chester Arthur Drenning	Wrightsville
Earl Sylvester Dunlap	Montoursville
Helen Kathryn Dunsmore	Philipsburg
James de la Montagne Earle	Lewisburg

Name	Address
Mary Lillian Edmunds	Crafton
Mary Emily Eisenmenger	Williamsport
Frank Fremont Elliott	Parker's Landing
Edgar Eugene English	Jersey Shore
Carl August Erickson	Great Neck, N. Y.
Mildred Louise Evans	Wilkes-Barre
Margaret Ellen Everitt	Allenwood
Herald Price Fahringer	Sunbury
Helen Evelyn Fairfax	Williamsport
Richard Reed Feight	Bedford
Robert Palmer Fernsler, Jr.	Sunbury
Helen Gertrude Fisher	Lewisburg
Ralph Rhinesmith Fleming	Paterson, N. J.
Joseph Roseberry Gardner	Hackettstown, N. J.
La Rose Hyacinth Gemmill	Windsor
Geneva Beatrice Gerlach	Hazleton
Olga Amalie Goerdel	Mifflinburg
Mildred Olive Good	Johnstown
Robert Russell Gray	Bradenville
Robert Warren Gray	Manor
Lillian Elizabeth Greenland	Pittston
Miriam Herr Haldeman	Malvern
Walter James Hall	Shamokin
Lois Hall Hamblin	Lewisburg
Thomas Michael Hammond	Reynoldsville
Levi Francis Hartman	Williamsport
Robert Christian Heim	Lewisburg
Terring Whitfield Heironimus	Grafton, W. Va.
Robert Frank Heiser	Mahanoy City
Ida Roberta Heller	Williamsport
Floyd Grove Hempt	New Cumberland
Charles McMinn Hennen	Fairmount, W. Va.
Herbert William Henning	Dunkirk, N. Y.
Ethel Mary Henry	Lewisburg
Anna Stewart Heysham	Norristown
Earl Wilson Hill	Lewisburg
Stephen Andrew Hodoba	Mt. Carmel
Hayward James Holbert	Fairmont, W. Va.
James Jones Holsing	Canonsburg
Henry Walter Holter	Howard
Mary Margaret Holter	Johnsonburg



Name	Address
Elliott Stephens Hopler	Bartley, N. J.
Thomas Ignatius Horan	Locust Gap
Elva Glenn Horner	Derry
Mildred Elizabeth Houseman	Altoona
Roland Ogilvie Hudson	Lansdale
Carolyn Julia Hunt	Lewisburg
Harold Alvin Hutchison	Scottdale
Clinton Brown Hyatt	Loganton
Effie Claire Ireland	Jeanette
Foster Duncan Jemison	Princeton, N. J.
Donald Miles Johnson	Lewisburg
Helen Elizabeth Johnson	Fairchance
Ruth Irene Johnson	Lewisburg
Malcolm Gwynne Jones	Nanticoke
Thomas William Jones	Plymouth
William Lambert Joseph	Youngwood
Alvin Fred Julian	Reading
Donald Bruce Keim	Danville
Clyde Ernest Kelly	Scottdale
Adelaide Louise King	Plainfield, N. J.
Eleanor Grant Kingsbury	Holyoke, Mass.
Peter Francis Kinyoun	Penn Yan, N. Y.
Albert McKinley Kishbaugh	Nesquehoning
George Dewey Knight	Cogan Station
John Koblish	Plymouth
John Carlisle Koch	Harrisburg
Russell Maurice Kostenbauder	Aristes
James Hard Landau	Sunbury
Mary Catherine Lape	Johnstown
Raymond Hilding Larson	Port Allegany
Charles Hubert Leehan	Pittston
Gordon Merrill Lenox	Coraopolis
John Eustace Lenox	Coraopolis
Geddy Gilbert Lesaius	Inkerman
Charles Frederick Lindig	Lewisburg
Eleanor Heim Little	Picture Rocks
Robert Leland Livingston	Clearfield
Mary Taylor Llewellyn	Avoca
William Llewellyn	Wilkes-Barre
Helen Elizabeth Lockard	Johnstown

Name	Address
George Walter Long	Ardmore
Curtis Milton Lowry	Uniondale
Robert William Machamer	Lewisburg
Maggie Martin	Pittston
Florence Margaret Martz	Washingtonville
Galen Stuart McInroy	Middlebury Center
John Laird McKay, Jr.	Philadelphia
Arthur John McMurtrie	Muncy
Mildred Megahan	Williamsport
Wayne Samuel Mengel	Shamokin
Elizabeth Middleton	Camden, N. J.
Oliver Nelson Miller, Jr.	Allentown
Elizabeth Voris Moore	Watsonstown
David Wendell Morgan	Franklin
Charles Archibald Munro	Rossiter
Lawrence Emery Murray	Reynoldsville
Henry Benjamin Mussina	Williamsport
Randall LaMar Newell	Canton
Harry Virgil Overdorff	Johnstown
Earl Emery Owens	Hemlock, N. Y.
Nicholas Palma	Paterson, N. J.
Henry Mark Parmley	Mahanoy City
Jairus Claire Patterson	Orangeville
James Nelson Patterson	Onnalinda
Chester William Patton	Parker's Landing
Mary Ruth Peck	Pittsburgh
Mary Elizabeth Peifer	Wilkes-Barre
Amos Vastine Persing, Jr.	Allenwood
Grayce Esther Peterson	Monesson
Ralph Edwin Phillips	Sunbury
Ruth Porter	Oil City
Ruth Raker	Allentown
Mary Elizabeth Rakestraw	Montoursville
Karen Narholm Rasmussen	Perth Amboy, N. J.
Gerald Mark Rassweiler	Lewisburg
Harold Earl Reed	Juniata
William Daniel Reitz	Lewisburg
Ralph Wallace Richards	Altoona
Edwin David Robb	Howard
Henry Tracy Rockwell	Monroeton
Sidney George Rosenbloom	Austin
Harry Frederick Roye	Malvern

Name	Address
Alma Winifred Royer	Hazleton
Sara Alice Ruhl	Lewisburg
Albert Clarence Samley	Pittston
Jefferson Verne Sangston	McClellandtown
Kermit Leitzel Saxon	Scranton
Harold Luther Schaefer	Cogan Station
Charles Luther Schulz	Pottstown
Seward William Seybold	New Kensington
Clarence Merrill Shaffer	Latrobe
Myrtle Gertrude Sharp	Flemington, N. J.
Margaret Jean Smith	Paterson, N. J.
Louis Walter Sobray	Mt. Pleasant
Oliver Thomas Sommerville	Rutherford, N. J.
Edwin Clifford Soultz	Great Bend, N. Y.
Lester Clearman Stanton	Waymart
Rachel Marie Steckel	Slatington
Kathryn Rebecca Steckman	Roanoke, Va.
Margaret Bower Steely	Lewisburg
Mary Anne Fulton Stephens	Johnstown
Percy Kenneth Steventon	Nesquehoning
Mary Pauline Stocker	Milton
Alice Eleanor Stokes	Montgomery
Alfred Gordon Stoughton	Jeannette
Evelyn Kedzie Strauser	Williamsport
Elma Virginia Streeter	Williamsport
Milton Jones Stringer	Philadelphia
Florence Beatrice Supplee	Northbrook
Paul Rufus Sweitzer	Plymouth
Stephen Terpak	Simpson
Milton Edgar Trainer	Paulsboro, N. J.
Archibald Myglis Van Blarcom	Paterson, N. J.
Emily Van Dyke	Sunbury
Elizabeth Margaret Wagner	Smithton
Elizabeth Sanford Walker	Farmingdale, N. J.
Paul Newton Walker	Verona
Penrose Conwell Wallace	Windsor
Prudence Lunetta Walters	Lewisburg
Martha Winifred Watkins	W. Pittston
James Harold Watson	Franklin
Mary Elizabeth Weeter	New Bloomfield
Ruth Hamilton Weidenhamer	Lewisburg
Evelyn Mae Weidensaul	Lewisburg

Name	Address
Jessie Read Wendell	Philadelphia
Roland Morris Wendell	Philadelphia
Ebenezer David Williams	Nanticoke
Anthony Karl Wilsbach	Harrisburg
Merritt Bingham Wilson	Mt. Holly, N. J.
Wendell Holmes Woodside	Clearfield
Elizabeth Wurtenburg	Towanda
Robert John Young, Jr.	Snow Shoe
Arthur Gould Zimmerman	Pittston
Fred Thomas Zimmerman	Shamokin

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## FRESHMEN: CLASS OF 1925

Name	Address
Margaret Dorothy Ackerman	Erie
Eunice Elvira Andersson	Lewisburg
Frank Eldon Baker	Wellsboro
Leslie Earl Baker	Espy
Louis Esther Barnes	Ashland
Catherine Simpson Baxter	Allenwood
Huldah Jeanette Baxter	Downsville, N. Y.
Mary Louisa Baxter	Downsville, N. Y.
George Hodge Beale	Oakmont
Frank Fred Emerson Becker	Wilkes-Barre
Addison Behling	Pitman, N. J.
Dorothy Naomi Berkheimer	Watsonstown
Mildred Pearl Biddison	Malvern
Joseph Karl Bird	Clearfield
Lynn Nevin Bitner	Lewisburg
Robert Charles Bixler	Hanover
Charles Beckwith Boone	Harrisburg
Charlotte Evans Bosler	Johnstown
Robert Greenleaf Brandt	Pittsburgh
Mary Phoebe Bray	Freeland
Elinor La Rue Breisch	Ringtown
Warren Franklin Breisch	Catawissa
Joshua Alexander Breisch	Philadelphia
John Paul Bressler	Donaldson
Alice Mabel Bridge	Jersey Shore
Myron Antony Brognard	Manasquan, N. J.

Name	Address
Paul James Brooks	Milton
Anna Lutz Brown	Pitman, N. J.
Carolyn Elizabeth Brown	Derry
Leon Clayton Bubeck	Schuylkill Haven
Clifton Leon Buckley	West Chester
Max William Bussom	Williamsport
Edgar Houseman Butler	Clearfield
Mark Selden Butler	Thompson
Smith Leroy Byham	Kane
Antonio Canto	Merida, Yucatan, Mexico
Joseph Howard Carson	Parkesburg
William Hall Challis	Wilkes-Barre
Lawrence Rondell Cherrington	Bloomsburg
William Christian	Nanticoke
Robert John Clingerman	Pittsburgh
William Henry Colestock	Lewisburg
Raymond Jerome Conter	Pennsville, N. J.
Wilbur Wingert Cook	Lewisburg
Anna Nettie Cooper	Montgomery
John Fremont Cox	Munhall
Fred Wilson Cozadd	Sharon
Roland Clark Cunningham	Ocean City, N. J.
Clarence Simon Czernecky	Shenandoah
George Edward Danyluk	Buffalo, N. Y.
Edwin Jacob Davies	Nanticoke
Alice Vivian Davis	Olyphant
Frances Moore Davis	Lewisburg
Randall Leland Davis	Cleveland, O.
Myron Franklin Decker	Williamsport
Frederick Burton Derby	Scranton
Arthur Franklin Dixon	Rutherford, N. J.
Roena May Dock	Lewisburg
Jesse Moody Dodson	Westmont, N. J.
Willis Sylvester Drake	Vandergrift
Charles Harold Drum	Syracuse, N. Y.
William Oscar Duck	Lewisburg
John Durovick	Mount Carmel
Albert Gleaves Eastman	Wilmington, Del.
Adelaide Lenore Eastman	Wilmington, Del.
Alexander Willis Edgar	Wilkinsburg

Name	Address
Thomas Delbert Edgar, Jr.	Wilkinsburg
Leiser Oliver Eisenhauer	Lewisburg
Earle Edward Ellis	Watsonstown
Stephen Chapman Emmanuel, Jr.	Wilkes-Barre
Donald Cameron England	Wilkinsburg
Anna Lippincott Engle	Moorestown, N. J.
Harry Hovlacher Engle	Dalmatia
Russel Dewey Erhardt	Scranton
Donald Opp Eschbach	Milton
William Chester Evans	Homestead
George Richard Faint	Roselle Park, N. J.
John Walraven Farley, Jr.	Berwyn
William Paul Fegley	Sunbury
Elizabeth Romaine Fisher	Watsonstown
James Wallace Foster	Oakmont
Mildred Cornelia Francisco	Great Notch, N. J.
Allan Horton Frank	Sugargrove
Frank Lincoln Frost, Jr.	Dunkirk, N. Y.
Gertrude Gardner	Carbondale
Abram John Smith Gaskill	Wilkinsburg
Mildred Hannah Gass	Buckhorn
Helen Kathryn Glase	Lewisburg
Helen Elizabeth Glass	Reading
William DeRuth Golightly	Milton
Alexander Fleming Gray	Bradenville
Russell Benjamin Green	Sharon
James Russell Gregory	Johnstown
Harold Israel Grice	Scranton
Philip Randall Griffin	Scranton
John Owen Griffiths	Girardville
Ruth Irene Grove	Lewisburg
Blanchard Stanley Gummo	Lock Haven
Ralph Semans Hagan	Uniontown
Elizabeth Julia Harman	Milton
Albert Henry Harris	Millville, N. J.
Elizabeth Kathryn Hartranft	Montgomery
Wildon Taylor Harvey	Coatesville
Francis Haskett	Trenton, N. J.
Colvin Hassenplug	Milton
Raymond Hearst Heiligman	Lehigh



Name	Address
Andrew Hendrickson	Pedricktown, N. J.
George Theodore Henggi	Oakmont
Wilbur Sterling Hennen	Fairmont, W. Va.
Donald Elder Henry	Apollo
Thomas James Henry, Jr.	Apollo
George William Hevner	Galeton
Theodore Heysham, Jr.	Norristown
Lillian Higgins	Flemington, N. J.
Carl Augustus Hile	Lumber City
Harold Leonard Hill	Franklin
Herman John Himmelreich	Lewisburg
Malcolm Whitson Hoopes	West Chester
Reuben Benjamin Houston	Apollo
Lawton Austin Huffman	East Stroudsburg
Rebekah Viola Hunter	Spring City
Steve Campbell Husted	Williamsport
Marshall Hammond Irvin	Lewisburg
Coral Emma Jack	Wayne, N. J.
Margaret Rodgers James	Allentown
Emerson Jenkins	Scranton
Abram Edward Joffe	Paterson, N. J.
Albert Williams Johnson, Jr.	Lewisburg
Evan Malbone Johnson, Jr.	Moore
Allen Franklin Jones	Centralia
Elmer Miles Jones	Wilkes-Barre
Frank Lydick Jones	Punxsutawney
Martha Jane Jones	Pittston
Carl Gailard Kapp	Watson town
John William Karboski	Nanticoke
Ruth Keebler	Freeport
Walter LeRoy Keyser	Montoursville
Lee Kissinger	Sunbury
Carl Henry Kivler	Nanticoke
Carrol Keiser Kline	Lewisburg
Warren Thomas Kopp	Williamsport
Lowell Edgar Krebs	Colegrove
Sara Elizabeth Kredel	Johnstown
Joseph Laher	Everett
James Beadle Wainwright Lansing	Manasquan, N. J.
John Huffner Lauder	Ridgway

Name	Address
Jesse Laventhol	Philadelphia
Kenneth Edwin Lavo	Williamsport
Carolyn Irene Leaf	Derry
John Joseph Lehman, Jr.	Wilkes-Barre
Samuel Thompson Leshner	Carbondale
Santo Joseph Lipari	Atlantic City, N. J.
Ruth Elizabeth Lupold	Sunbury
Murdo James Mackenzie	Philadelphia
William Vickers Mahaffey	Oakmont
Webster Stanley Mann	Catasauqua
John Bennett Marlin	DuBois
Clarence John Martz	Washingtonville
Joseph Daniel Masi	Watertown, Conn.
Grace Valeria Matz	Shillington
Harold Allison Mayes	Howard
Mary Agnes Mayes	Milton
Robert Holt McBride	Paterson, N. J.
William Charles McFarland	Parkesburg
Anna Marian McIlnay	Watsonstown
Roye Miller McLane	Lemoyne
Kenneth Earl McMurray	Wilkinsburg
Margaret Beatrice Mettler	Elysburg
Paul Joseph Meyer	Jersey City, N. J.
Charles Miller, Jr.	Mt. Carmel
Raymond Hall Miller	Salem, N. J.
Rebecca Pearl Milliken	Lewisburg
Thomas Buckworth Mills	Pittston
Grant Harrison Mixell	Duncannon
Helen Elizabeth Morton	Woodcliffe, N. J.
Bernard Martin Moss	Paulsboro, N. J.
Foster Charles Motter	Montgomery
Ralph Eugene Mucher	Wiconsico
Charles Newton Drebs Mumey	Lewisburg
Donald Murray	Altoona
Franklin Benard Myers	Pottsville
John Edward Namisniak	Nanticoke
Wilson Rittenhouse Neisser	Philadelphia
Roy Elvin Nicodemus	Bloomsburg
Wanda Coates Nicol	Archbald
Kermit Levan Noll	Zion

Name	Address
Edmund Nowicki	Nanticoke
Harold Gold Painter	Lewisburg
Alevander Matui Palmer	Oakmont
Albert Roy Pechan	Ford City
Helen Gertrude Peifer	Wilkes-Barre
Roy Peters	Lambertville, N. J.
Warren Pinner	Camden, N. J.
Dragomir Popovitch	Pozarevats, Serbia
Mary Ann Porter	Oil City
Florence Pratt	Camden, N. J.
Clara Ellen Price	Linden
John Maxwell Reed	Lewisburg
Roslyn Thomas Reed	Dorchester, Va.
William Arthur Rees	Providence, R. I.
Herbert Alden Reese	Union City
Phoebe Margaret Reinhart	Milton
Mary Dorothy Repogle	Johnstown
Edythe Rainear Reynolds	Mount Holly, N. J.
William Leaming Rice	Wildwood, N. J.
George Findley Riddle	Oakmont
Charles Gerald Rishel	Emporium
Matthew Thomas Roberts	Watertown, Conn.
Harold Franklin Roles	Juniata
Alice Evans Rossiter	Norristown
Albert Woodring Rothrock	Tyrone
Forrest Moore Rutherford	Laurelton
Harry Rutter	Northumberland
Vera Sackett	Downsville, N. Y.
Samuel Philip Sardo	Johnstown
Alice James Savage	Haddonfield, N. J.
Dollie Noulle Schaffner	Falls Creek
Russell Charles Edward Schue	Hanover
Romualdo Richard Scicchitano	Keiser
Ellen Virginia Scott	Oakbourne
Mary Elizabeth Seidel	Milton
Robert Barnes Shaffer	West Chester
Myron Lee Sherwood	Marquette, Mich.
Samuel James Simonton	Allentown
Herbert William Slack	Sunbury
Robert Daniel Smink	Shamokin

## Name

## Address

James Aiken Smith	Knoxville
Leonore Bentley Smith	Lewisburg
Carrie Catharine Smithgall	Montoursville
Dorothy Stabler Snyder	Altoona
Johannetta Snyder	Mahanoy City
Marion Delmar Sours	Harrisburg
Archie Rudolph Spangler	Coudersport
Clair Grove Spangler	Lewisburg
Sara Elizabeth Spotts	Milton
Allen Richard Stephens	Newberry
William Samuel Stephens	Johnstown
Walter Arthur Stevens	Friendship, N. Y.
Edward Lamont Stewart	Montgomery
Estella Iva Stewart	Turtle Creek
Russell Earl Stewart	Ford City
Myrtle Louise Stickler	Hazleton
Ralph Mattern Stine	Tyrone
Louis Arthur Swanson	Latrobe
George Franklin Swartwood	Wilkes-Barre
Martha Catharine Swartz	Lewisburg
Earl Crabill Swisher	Milton
Sylvia Eliza Tanner	Milton
Allen Weisel Tarr	Philadelphia
Warren Edward Thamarus	Lehighton
Albert Thomas	Olyphant
Howard Fayette Clark Thomas	Lewisburg
Marshall Thomas	Olyphant
William George Thomas, Jr.	Nanticoke
Myrtle Kathryn Thompson	Mifflinburg
William Espy Thompson, Jr.	Philadelphia
Ezra Paul Tompkins	Madison, Me.
Louis George Troutman	Centralia
Frank Sankey Turner	Munhall
Esther Elizabeth Vonada	Lewisburg
Dale Roosevelt Wagner	Lewisburg
Herbert Carl Wagner	Lewisburg
Howard Watson Wagner	Waymart
Frank Edwin Waldner	Ashland
Mildred Frances Walker	Farmingdale, N. J.
John Arthur Walter	Claysburg
Sara Dudley Walton	Moorestown, N. J.

Name	Address
Joseph Thomas Washleski	Shamokin
George Samuel Weber	Mount Ranier, Md.
Melrose Edmund Weed	Reynoldsville
James Joseph Whalen	Milton
Alton DeForest White	Wysox
Charles Frederick White	Olyphant
Theodore Addison White	Warren
Wilfred Whitman Wilcox	Knoxville
Harry Williams	Nanticoke
Robert Joseph Hughes Williams	Wilkes-Barre
Charles Pennock Williamson	West Chester
Carl Kline Wolfe	Allentown
Harry Ricker Wolfersberger	Campbelltown
Robert Thomas Woodings	Oakmont
Paul Jennings Woodring	Reynoldsville
Thomas Wilbraham Wright, Jr.	Bridgeton, N. J.
Emily Belle Wurster	Williamsport
Ronald Baker Yothers	Pitcairn
Kenneth Earl Young	Monroeton
Harry Raymond Zimmerman	Verona
Thomas Moore Zimmerman, Jr.	Dawson

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### SPECIAL STUDENTS

Name	Address
Beatrice Marie Landelle Butler	Milton
Olive Douglass	Lewisburg
Mary Ellen Harris	Lewisburg
Abigail Eldridge Johnson	Lewisburg
Willard Edwin Kramer	Oil City
Mary Elizabeth Kumer	Shamokin
Emma Valeria Matz	Shillington
Helen Marie Powell	Bivalve, N. J.
Grace Susan Reitz	Lewisburg
Elizabeth Avis Speakman	Williamsport
Miriam Harp Stanger	Glassboro, N. J.
Kathryn Miller Wagner	Lewisburg
Virginia Walton	Media

**SUMMARY OF COLLEGE STUDENTS**

Graduates .....	8
Seniors .....	136
Juniors .....	199
Sophomores .....	223
Freshmen .....	288
Special Students .....	13
	<hr/>
Total .....	867



## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

By States		Columbia	14
Connecticut	2	Crawford	1
Delaware	3	Cumberland	4
Indiana	1	Dauphin	14
Iowa	1	Delaware	3
Maine	1	Elk	6
Maryland	3	Erie	2
Massachusetts	2	Fayette	9
Michigan	1	Forest	1
New Jersey	94	Franklin	1
New York	23	Indiana	1
Ohio	2	Jefferson	11
Pennsylvania	722	Lackawanna	28
Rhode Island	1	Lancaster	2
Virginia	2	Lebanon	4
West Virginia	6	Lehigh	8
Total	864	Luzerne	74
By Foreign Countries		Lycoming	63
Mexico	1	McKean	7
Serbia	1	Mercer	2
South America	1	Mifflin	1
Total	3	Monroe	1
By Counties in Pennsylvania		Montgomery	12
Allegheny	36	Montour	6
Armstrong	11	Northumberland	77
Bedford	2	Perry	5
Berks	22	Philadelphia	22
Blair	18	Potter	5
Bradford	9	Schuylkill	14
Bucks	3	Sullivan	1
Cambria	19	Susquehanna	9
Cameron	1	Tioga	4
Carbon	6	Union	95
Center	8	Venango	7
Chester	17	Warren	2
Clearfield	9	Washington	2
Clinton	3	Wayne	5
		Westmoreland	25
		Wyoming	4
		York	6
		Total	722
		Final Total	867

# ALUMNI ORGANIZATIONS

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## GENERAL ALUMNI ASSOCIATION

President, Carl C. Law, Esq., '85

325 South Graham St., Pittsburgh

Secretary, Leo L. Rockwell, '07,

Lewisburg

## THE ALUMNI CLUB OF PHILADELPHIA

President, Dr. Samuel Bolton, '85

4701 Leiper St.

Secretary, Louis W. Robey, Esq., '04

918 Stephen Girard Bldg.

## THE ALUMNI CLUB OF NEW YORK CITY

President, Rush H. Kress, '00

225 W. 86th St.

Secretary, Creighton M. Konkle, '01

48 E. Hawthorne Ave., East Orange, N. J.

## THE ALUMNI CLUB OF PITTSBURGH

President, E. P. Griffiths, Esq., '04

1015 Union Bank Bldg.

Secretary, Helge Florin, '09

387 Union Arcade

## THE ALUMNI CLUB OF CHICAGO

President, W. C. MacNaul, '90

6510 Ellis Ave.

Secretary, G. T. Keech, '15

4919 Sheridan Road

## THE ALUMNI CLUB OF NORTHEASTERN PENNSYLVANIA

President, James P. Harris, Esq., '12

609 Coal Exchange Bldg., Wilkes-Barre

Secretary, Sidney Grabowski, Esq., '14, 417 Connell Bldg., Scranton

## THE ALUMNI CLUB OF HARRISBURG

President, J. A. Tyson, '11

Kunkle Bldg.

Secretary, W. C. Sprout, '08

% The Patriot, Harrisburg

## THE ALUMNI CLUB OF WASHINGTON

President, Henry H. Bliss, Esq., '70

Ouray Bldg.

Secretary, Frank W. Tilley, '98

1311 21st St., N. W.

## THE ALUMNI CLUB OF CENTRAL PENNSYLVANIA

President, Judge Thomas J. Baldrige, ex-'95

Hollidaysburg

Secretary, Rev. S. F. Forgeus, D.D., '72

Huntingdon

## THE ALUMNI CLUB OF WILLIAMSPORT

President, Oliver J. Decker, Esq., '99

Trust Bldg.

Secretary, Anne Galbraith, '07

965 High St.

**THE ALUMNI CLUB OF LEWISBURG**

President, Leroy T. Butler, '97 Lewisburg  
 Secretary, Claire G. Groover, '15 Lewisburg

**THE ALUMNI CLUB OF SUNBURY**

President, George Edward Deppen, Esq., '94 Sunbury  
 Secretary, Cullen Frazer Shipman, Esq., '99 Sunbury

**THE ALUMNI CLUB OF CALIFORNIA**

President, Allan G. Ritter, Esq., '09 1012 Black Bldg., Los Angeles  
 Secretary, Roy J. Farr, Esq., '08,  
 716 Ferguson Bldg., Los Angeles

**THE ALUMNI CLUB OF CHINA**

President, Charles Way Harvey, '00 20 Museum Road, Shanghai  
 Secretary, Rev. Lewis C. Hylbert, '05 Ningpo

**THE HAZLETON ALUMNI CLUB**

President, Rev. Joseph H. Cooke, '98 Hazleton  
 Secretary, Nora Dodson, '11 90 N. Laurel St.

**THE WILMINGTON ALUMNI CLUB**

President, Leslie W. Stout, '13 % Industrial Trust Co.  
 Secretary, Ruth Barthold, '17 % High School

**THE CLEVELAND ALUMNI CLUB**

President, Ralph W. Snow, '94 1024 B. of L. E. Bldg.  
 Secretary, Helen Moyle Bailey, '20 1920 E. 84th St.

**MIFFLIN-JUNIATA ALUMNI CLUB**

President, Hiram N. Wolfe, '11 Lewistown  
 Secretary, Catherine G. Thompson, '19 Reedsville

**BERKS COUNTY ALUMNI CLUB**

President, Dayton L. Ranck, '16 % Narrow Fabric Co., Reading  
 Secretary, Mary Stanton Speicher, '07 1050 Madison Ave., Reading

**THE GENERAL ALUMNAE ASSOCIATION**

President, Mrs. W. L. Gerhart Lewisburg  
 Secretary, Mrs. Ruth Mohn Baker Lewisburg

**THE PITTSBURGH ALUMNAE CLUB**

President Mrs. John B. Dumont, Jr., Inst. '00  
 312 Frederick Ave., Sewickley  
 Secretary, Bina Carr 5511 Howe St.

**THE PHILADELPHIA ALUMNAE CLUB**

President, Mrs. Romain C. Hassrick  
Secretary, Carrie McCaskie Wise, '06

4518 Chestnut St.  
23 Mill Road, Ashbourne

**THE LEWISBURG ALUMNAE CLUB**

President, Mrs. Margaret Stoughton Meyer, Inst. '05  
Secretary, Fanny Getz Brown, Mus., '06

Lewisburg  
Lewisburg

**THE ALUMNI ASSOCIATION**

The General Alumni Association is the official organization of the Alumni to advance the interests of the University. It is incorporated. All former students of the college are members, but only those who have paid the life membership fee or the annual dues are eligible to vote or to hold office.

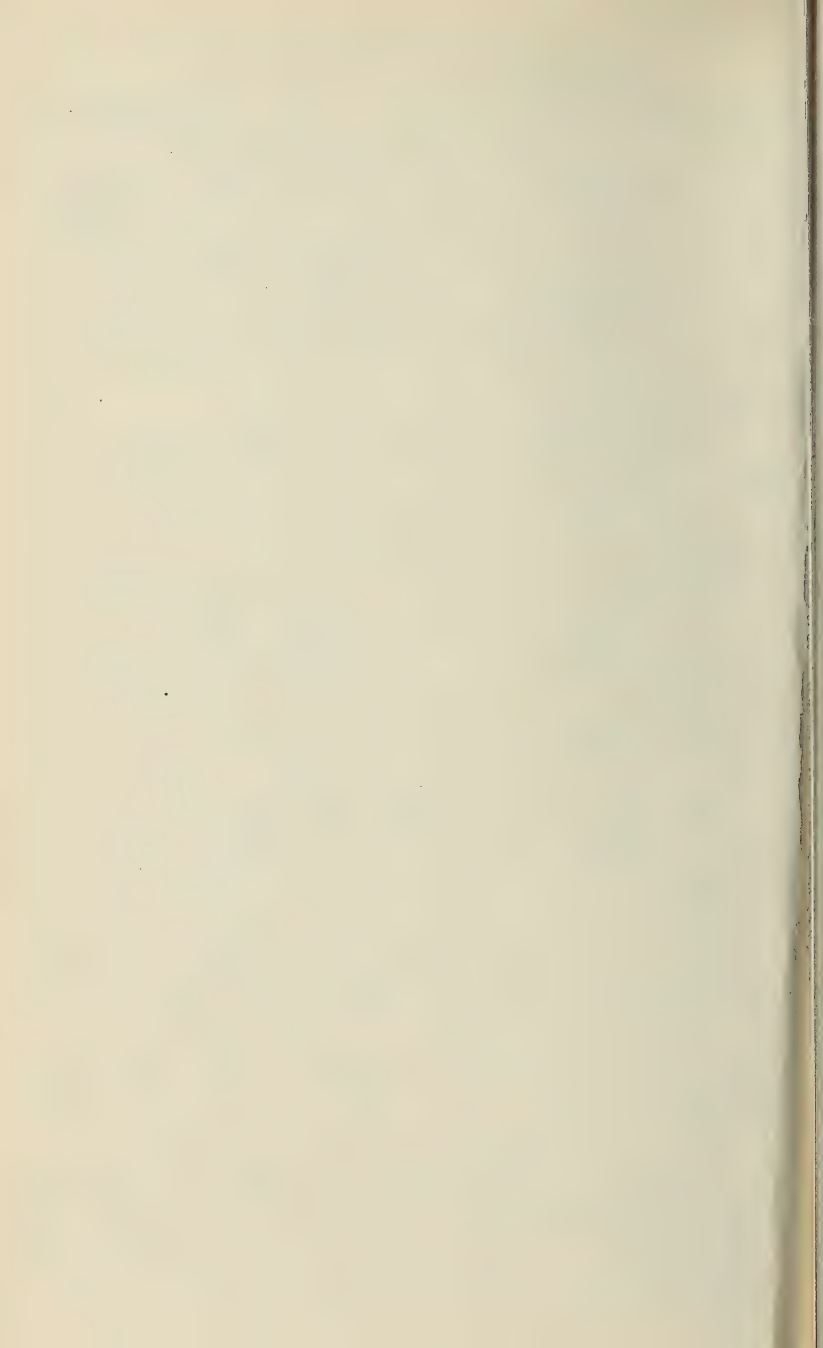
The officers are a President, a Secretary, and a Treasurer. The Alumni Council is composed of one representative each from the various local clubs. The Board of Managers is the Board of Directors of the corporation. It is elected by the Alumni Council.

The annual membership fee, including subscription to the Alumni Monthly, is \$2.50. The life membership fee, including life subscription to the Alumni Monthly, is \$25. The Alumni Monthly subscription to those who are life members under the old \$5 and \$10 plans, is 1.50. Checks in payment of dues should be made out to Frank M. Simpson, Treasurer of the Association.

**THE ALUMNI OFFICE**

The Alumni Office in Main College is in charge of the Alumni Secretary. The Alumni Records are kept here. They include the Addressograph geographical files, the card class and alphabetical files, and miscellaneous files of various kinds. The Alumni Office appreciates prompt notice of address changes on the part of Alumni. A beginning has been made of a collection of historical material dealing with the University. This includes old issues of The College Herald, The Bucknell Mirror, L'Agenda, the Orange and Blue, pictures of historical interest, books and clippings, and the like. Gifts to this collection will be gladly received.

The Alumni Monthly, published monthly from October to June, aims to keep the Alumni informed of the progress of the University, of the activities of the Alumni, and so far as possible of undergraduate activities. It serves also as a clearing house of Alumni opinion on topics of general interest to friends of the University.



Bucknell University



The School of Music





# THE SCHOOL OF MUSIC

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## FACULTY

PAUL GEORGE STOLZ, A.M.

Director, Science of Music, Voice

(Bucknell University School of Music, Dr. Elysée Aviragnet, A.M.;  
Dr. Hugh Schussler, New York; Emrich and Soehnlín,  
Berlin)

CHARLOTTE GUION ARMSTRONG

Violin

(Wyoming Seminary; New England Conservatory; Musin,  
New York City).

ANNA MARTHA PINES

Supervisor's Course

(Bucknell University School of Music; Comb's Conservatory,  
Philadelphia; Cornell University, Ithaca, N. Y.)

DAVID EARL MOYER

Piano

(Alberta Jonas, Berlin; Ernst von Dohnanyi, Berlin; Royal Academy,  
Berlin.)

KATHERINE BERGSTRESSER

Piano

(Bucknell University School of Music; Peabody Conservatory of  
Music, George Boyle; Wilson College, Chambersburg).

JANET S. MENCH

Pipe Organ

(Bucknell University School of Music; Dr. Fred Wolle)

HELEN ELIZABETH SWARTZ, A.B.

Piano, Harmony

(Bucknell University; Wellesley College; Clarence G. Hamilton;  
Hamilton C. Macdougall)

ADRIAN WYNNOBEL

Voice

(Pursued studies with teachers in The Hague and New York City.)

HELEN M. SEGNER, A.B.

Piano, Harmony

(Wilson College; George Boyle, Peabody, Baltimore.)

MARGUERITE HARTMAN

Voice

(Bucknell University School of Music; Wilson College)

GRACE JENKINS

(Coombs Conservatory, Philadelphia)

## HISTORICAL

Music was first taught at Bucknell University in 1853 by Melville Malcolm under the supervision of the Seminary. Various teachers had charge until 1858, when Monsieur Theodore P. Held, a French artist, took charge with one assistant, and in 1864 he was given a second assistant. In 1865 Monsieur Held's position became vacant, but he again resumed his work in 1866. In 1867 Alexander M. Loos was made Professor of Music. In 1869 Hermann F. Eberhardt took up the duties of Professor of Music and by 1870 there were sixty students enrolled in the Music Department. In 1871 a vocal teacher was added to the music faculty. In 1888 Professor Elysée Aviragnet, M.A., took charge of the Music Department. In 1892 Professor Aviragnet received the degree of Doctor of Music, after which the Music Department was known as the Bucknell University School of Music, one of the distinct schools of the University, which are one corporation and have one President, who has general charge. Paul Stolz was actively associated with Dr. Aviragnet and his work in the School of Music. He became his assistant, later Assistant Director, and at Dr. Aviragnet's death in 1908, his successor as Director of the School of Music.

In 1921 the music faculty consisted of eleven teachers, four in piano, three in voice, one in violin, two in pipe organ, and one in supervisor's course, with an attendance of one hundred and seventy-seven pupils.

## ADMISSION TO THE SCHOOL OF MUSIC

All applicants for admission should secure application blanks from the Director or Recorder.

### REQUIREMENTS

Fifteen units of secondary school work are required for admission. No student is admitted with less than thirteen units. A unit is a course of study pursued for a year, at least four periods a week of forty minutes each.

#### Elementary Musical Training

For the course in voice, ability to sing at sight hymns and folk tunes with a fair degree of accuracy and facility; and the possession of an acceptable singing voice and of a fairly quick sense of tone and rhythm.

For the course in piano, ability to play Heller Opus 47; Bertini Opus 29; Sonatinas by Clementi, Reinecke; or Kuhlau; Bach's Little Preludes; Mozart, and Haydn, easier Sonatas.

Students who do not meet the above requirements may enter the Preparatory Department.

## COURSES OF INSTRUCTION

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### INSTRUMENTAL MUSIC

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#### COURSE FOR THE PIANO-FORTE OF FOUR YEARS FOR GRADUATION

The pupil is required to pursue the most thoroughly approved modern system of technical training. After the first rudiments have been mastered, the Course of instruction leads to the practice of études, designed to unite with purely technical drill the requirements of artistic style and expression.

## COURSE IN PIANO

### First Year

Bach two and three part Inventions; Heller Opus 45 and 46; Czerny Opus 299; Cramer Studies; Mendelssohn's Songs without Words; Sonatas by Mozart, Beethoven, Haydn. Easy classic compositions. Preparatory octave and chord studies, scales arpeggios.

### Second Year

Bach Suites; Czerny Opus 740; Clementi Gradus ad Parnassum; pieces by Mendelssohn, Schubert, Schumann, Chopin, Grieg and others; Beethoven, Sonatas, scales, arpeggios, thirds and octaves.

### Third Year

Bach Well tempered Clavichord; Studies by Kessler, Henselt, Moschele, Beethoven, Sonatas; Compositions by Schumann; Chopin Preludes, Nocturnes, Polonaises, Ballades; Selections by modern composers.

### Fourth Year

Bach Clavichord; Arrangements of Bach's Works; Chopin Etudes; Beethoven Sonatas; Selections from Liszt, Rubinstein, Debussy, Rachmaninoff and other modern schools.

### Theoretical Courses

Solfeggio and Dictation (two semesters).

Harmony (four semesters).

Harmonic Analysis (two semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

## COURSE IN PIPE ORGAN

The study of pipe organ is generally pursued by music students having at least Junior standing in piano. The Course is designed to provide a thorough education as choirmaster and organist, and provides for a training in all that pertains to intelligent performance of church music, voluntaries, and the art of accompaniment; also a systematic drill in technics, registration, and improvisation.

A new pipe organ for practice was installed during the summer of 1916.

### First Year

Stainer's Organ Method. Schneider's Organ Studies. Easy Hymn Tunes. Registration. Sight Reading. Easy pieces by Batiste, Flagler, Lemaigre, etc.

### Second Year

Dudley Buck's Short Preludes and Fugues, and Pedal Phrasing. Bach Chorales. Difficult hymn tunes. Organ solos of various styles by Rheinberg, DuBois, etc.

### Third Year

Sonatas by Merkel, Bach, and Mendelssohn. Preludes, Toccatas, Fugues. Quartet and chorus accompaniment. Selected solos by Guilmant, Malling, etc.

### Fourth Year

(Each Senior Must Register for Full Course)

Sonatas by Guilmant, Rebuke. Symphonies by Widor. Bach's Advanced Works. Chanting and solo accompaniment. Improvisation. Selected solos for concert use, by Frank, Widor, Lemare, Hollins, etc. Voice (two semesters).

It is very essential that an organist and choirmaster should understand the various voices he is to train, and for this reason we consider the voice requirement indispensable in the Organ Course.

A minor Course in Organ Construction will be required of graduate students in addition to the following theoretical courses:

Solfeggio and Dictation (two semesters).

Harmony (four semesters).

Harmonic Analysis (two semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

In order to give organ students a good presence in public appearance, all organ students will be required to appear in public and semi-public recitals once each month.

## COURSE IN VIOLIN

In the Violin Course, special attention is given to correct bowing, ear training and interpretation, a thorough acquisition, technically, and the study of a repertoire; with a few additions or changes to suit the individual requirements of the student, the general outline of the Course is as follows:



### First Year

Methods of Schubert, Wohlfart, Spohr, Belgian Violin School Book I, etc. Scales and bowing exercises to promote beauty of intonation. Easy pieces.

### Second Year

Schools by De Beriot, Mazas, and Kayser. First ten studies of Kreutzer. Belgian Violin School Book II.

### Third Year

Concertos by Viotti. Sonatas by Gade, Grieg, and others. Etudes by Kreutzer, Fiorillo, and Casorti. Belgian Violin School Book III.

### Fourth Year

Belgian Violin School Book IV. Rode Caprices and Concertos. Mendelssohn and Mozart Concertos. Solos by the best composers for the violin are used throughout the Course to develop style and phrasing.

Opportunity is given for ensemble playing to those sufficiently advanced. One year of pianoforte study is required.

Theoretical courses required for graduation:

Solfeggio and Dictation (two semesters).

Harmony and Analysis (4 semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

## COURSE IN VIOLONCELLO

### First Year

Technical exercises. Major scales in two octaves. "Method Practique", by S. Lee. Studies by Dotzauer. Easy pieces.

### Second Year

Technical exercises by Cossmann. Scales in three and four octaves. Studies by Lee and Franchomme. Concertinos and pieces by Romberg.

### Third Year

Technical exercises by Fitzhagen. Advanced studies by Grutzmacher. Concertos.

**Fourth Year**

Technical exercises by Klengel and Becker. Advanced studies. Sonatas by Bach.  
Theoretical courses. See Violin Course.

**COURSE IN CONTRABASS****First Year**

Warnecke's Method of Playing. Scales and finger exercises. Etudes.

**Second Year**

Vorzuegliche Uebungen, Hause's. Etudes. Overtures. Symphonies.

**Third Year**

Warnecke's Method. Advanced Etudes. Beethoven Symphonies.

**Fourth Year**

Warnecke's Method. Part 2. Wagner Operas. Solos by Sturm and Laska.

Theoretical courses. See Violin Course.

**COURSE IN VIOLA**

Bruni's Methods and Studies by Campagnoli.

**COURSE IN VOICE CULTURE**

Careful instruction is given in the use of the voice and the correct manner in producing purity of tone—the equalization of tone throughout the whole compass of the voice, and gain for it flexibility, fullness and durability.

**Tone Work.** Physiology, breath control, voice placing.

**Enunciation.** Attack, release, vibration, legato. (Vowels, diphthongs, and consorants).

**Sight Singing.** Staff notation, rhythm, ear training, harmony.

**Repertoire.** Interpretation and classification.

**Song, Oratorio, and Opera Coaching.** Pupils desiring to acquire the true rendition in oratorio solo singing, as exemplified in the interpretation of the great singers and conductors, can secure the necessary knowledge and thus equip themselves for public performances.

Ensemble singing, Duets, Trios, Quartets, and Choruses from Operas and Oratorios.

Studies from the works of old masters such as Palestrina, Orlando di Lasso, Gabrieli, Leo Hassler, etc.

Production of various opera scenes.

### First Year

Breath Control. First Vocalises of Concone. Diction. Slow, Easy Songs. Solfeggios.

### Second Year

Vocalises by Concone, Marchesi, Lamperti, and others. Diction. More advanced English songs. Simple Recitative. Simple Arias. Solfeggios. Piano (one lesson weekly). Chorus. Advanced Vocalises, Song Interpretations. Velocity.

### Third Year

Advanced Vocalises. Song Interpretation. Velocity. Coloratura singing begun. Difficult Recitatives. Elaborate Arias. Solfeggios Advanced. Chorus.

### Fourth Year

Complete Oratorio Rôles. Complete Opera Rôles. Preparation of Concert Programs. Chorus.

Theoretical courses required for graduation. See Theory for Piano Course.

## TEACHERS' COURSE IN PUBLIC SCHOOL MUSIC

This Course provides in a systematic manner the best teaching methods, together with a thorough drill in sight reading, ear training and harmony; also gives actual practice in conducting the classes. In most of the public schools the regular grade teachers instruct the pupils under the supervision of a supervisor trained for the work. The purpose of this department is training for such supervision; by instructing pupils how to teach others to teach sight singing.

Outline of music used in the four-year Supervisor's Course:

### First Year

**Sight Singing.** This Course is elementary. The student must

possess a singing voice of acceptable quality. Proficiency in sight singing is of great advantage to the student entering the Supervisor's Course.

To complete this course the student must use Latin syllables to sing at sight individually music suitable for the first four years in the public schools.

### Second Year

**Sight Singing.** The student is required to sing at sight with and without syllables, music suitable for the first seven years in the public schools.

### Third Year

**Sight Singing.** The student is required to sing at sight without accompaniment, reading words and music simultaneously, the music used in the upper grades of the public schools and in the high school.

### First Year

**Dictation.** (Sense of hearing based on the study of tone and rhythm). The student gains the power to think tones and to sense rhythms and learns to recognize and write simple melodic phrases in all keys.

Oral and written dictation work of the first four years in public school music, and singing from memory all sequential studies is required.

### Second Year

**Dictation.** Each student is required to complete the oral and written dictation, including all sequential studies.

### Third Year

**Dictation.** This course completes melodic dictation. Aural recognition of intervals and of chords in their fundamental and in their inverted positions in both major and minor tonalities is required in harmonic dictation.

### First and Second Years

**Materials and Methods.** The study and demonstration of materials and methods for kindergarten and the first four grades in public school music is considered. Selection, presentation, interpretation of rote songs for the lower grades, and the different tonal and rhythmic problems are taken up.

### Third Year

**Materials and Methods.** This Course is devoted to the teaching and supervising of music from fifth to eighth grades, inclusive.

### Fourth Year

**Materials and Methods.** The topics for consideration are: School chorus, glee clubs, grading and classification.

**Orchestral Technique.**

**Practice Teaching.**

Theoretical courses required for graduation:

Harmony and Analysis (four semesters).

Counterpoint and Fugue (two semesters).

History and Theory (two semesters).

### HARMONY

The fundamental principles of the theory of music are embodied in the study of harmony which treats of the different chords in their natural relations and combinations. The subdivisions of the subject are as follows: Intervals, or the measurement of the difference in pitch between one tone and another; triads, seventh and ninth chords with their inversions and resolutions; chromatically altered chords; augmented chords; cadences; suspensions; passing and changing notes; organ point, modulation.

The work consists of written exercises on basses (both figured and unfigured) and the harmonization of given melodies in three and four voices. These are corrected by the instructor out of the classroom and subsequently discussed with the students individually. Many exercises are also worked out on the blackboard by the students.

Modern Harmony, by Foote and Spalding, is used as the basis of the instruction. The Treatises of Prout, of Chadwick, and of others are used as reference books, and supplementary illustrations and explanations are given in the classroom. The course is as follows:

#### First Semester

Musical Notation, formation of Scales, both Major and Minor, intervals, triads, and chord connection. Simple part writing from given basses and sopranos; the chords of the seventh, with exercises harmonizing in open and close positions.

Modulation. Transposition of various models in all keys. Harmonizing melodies which modulate.

#### Second Semester

Chromatically altered chords, suspension, retardation, appoggiatura, passing tone, embellishment, pedal point.

No text-book required the first semester.



## CLASSES FOR ALL ORCHESTRAL INSTRUMENTS

Students who are sufficiently advanced in any of the above musical instruments will have opportunity of practice in string quartettes, trios, concertos, and symphonies of Beethoven, Mozart, and Haydn.

### RECITALS

Frequent recitals in the presence of the faculty and students of the School of Music and their friends are held to accustom students to playing in public, and for mutual improvement.

On the Friday evening prior to Commencement week a public recital of the School of Music is held in Bucknell Hall.

The public examination of those who desire certificates of proficiency is held in Bucknell Hall the Saturday afternoon before commencement. At this time each pupil plays or sings two pieces of high grade, and reads an essay on some subject connected with music.

### SPECIAL ADVANTAGES

Artists' Recitals. The opportunity of hearing good music rendered by artists of superior ability is very essential in connection with the classroom instruction. All students of the School of Music are urged to attend these concerts, as they are admitted without extra expense.

### TUITION

Tuition is charged for instruction in music, per semester, as follows:

	Full Course	Half Course	Quarter Course
Vocal,			
Professor Stolz .....	\$100.00	\$60.00	*
Professor Wynnobel .....	100.00	60.00	*
Miss Jenkins .....	75.00	40.00	\$25.00
Miss Hartman .....	50.00	30.00	19.00
Piano,			
Professor Moyer .....	100.00	60.00	*
Miss Bergstresser .....	75.00	40.00	25.00
Miss Segner .....	75.00	40.00	25.00
Miss Swartz .....	50.00	30.00	19.00
Pipe Organ .....	75.00	40.00	25.00
Violin .....	75.00	40.00	25.00
Supervisor's Course .....	50.00	*	*
Harmony in Class .....	15.00		
Use of Piano for practice (1 hour daily)	10.00		
History in Class .....	15.00		
Use of Pipe Organ for practice (1 hour daily) .....	20.00		
(*) indicates that these courses are not offered.			



The additional charges per semester for pupils residing in the Women's College will be as follows:

Board .....	\$ 100.00
Furnished Dormitory Room, including heat and light .....	30.00
Extra charge for rooms in Bucknell Cottage and in New Residence Hall .....	7.50
Student Budget .....	8.00

Special individual instruction in music, per lesson, \$5.00.

Full course implies two one-hour lessons per week, and theory.

Half course implies two half-hour lessons per week, and theory.

Quarter course implies one-half hour lesson per week, and theory.

No reduction is made except in case of protracted illness.

Instruction in the orchestra and in harmony is free to pupils pursuing other courses in music.

Payment is strictly in advance at the beginning of each semester.

### **RESIDENCE OF MUSIC PUPILS**

Women students in the Music School reside in the Women's College and are under the care of the Dean of Women. Those who wish to make music a specialty are recommended to register at the College for at least one course each semester in Language or Literature.

The regular charges for pupils in music, residing in the Women's College, are \$276 per annum. This does not include charges for instruction in music, which are determined by the number of lessons taken per week.

### **GRADUATION IN MUSIC**

Students who complete any of the Courses in Music and pass the examination, receive a certificate of proficiency. Students will not be taken as Fourth Year Pupils in Music until they have passed an examination before a committee consisting of members of the faculty and other appointed judges. Besides the examination before the Committee for admission to the Fourth Year, students will be required to pass a preliminary examination at the opening of the second semester, and a final examination before Commencement week. Students will not be admitted to the final examination unless they have passed the preliminary examination.

### **THE AVIRAGNET PRIZE**

Friends of the late Elysee Avirragnet have endowed a prize for excellence in Music. For 1921 this prize was given to Louise Frances Coombs.

**THE DIRECTOR'S PRIZE**

The Director of the School of Music offers an annual prize for excellence in the Science of Music. For 1921 this prize was awarded to Maybelle Ellyn DeSilva.

**VOICE PRIZE**

The Director also offers an annual prize for excellence in Voice. For 1921 this prize was awarded to Marguerite Caroline Hartman.

**GENERAL REGULATIONS**

Young women attending the School of Music are subject to the administration and other regulations enacted by the Board of Trustees for the government of students in the Women's College. Students of Music are also entitled to all the privileges of the Women's College.

# MUSIC

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## GRADUATE STUDENTS

Name	Course	Address
Helen Gertrude Fisher	Piano	Lewisburg
Carolyn Julia Hunt	Voice	Lewisburg

## FOURTH YEAR

Name	Course	Address
Norman Roy Appleton	Violin, History	Philadelphia
Edna Mary Baker	Piano	Lewisburg
Evelyn Mae Bennage	Piano	Milton
Claire Gift	Piano	Milton
Mary Ellen Harris	Voice	Lewisburg
Hilda Heller	Voice, Piano, Theory Supervisor	Forest City
Eloise Ernestine Hill	Violin	Williamsport
Mary Elizabeth Kumer	Piano, Pipe Organ, Theory	Shamokin
Elsie Leistner	Violin, Pipe Organ Theory	Erie
Frieda Leistner	Violin, Pipe Organ Theory	Erie
Jessie Wendell Pangburn	Voice, Pipe Organ	Lewisburg
Viola Mae Showers	Voice, Piano, Supervisor	New Columbia
Frances Edsall Van Cleaf	Voice	Stockholm N. J.
Katharine Miller Wagner	Piano, Voice	Lewisburg

## THIRD YEAR

Name	Address
Mary Marjorie Brindle	Piano, Pipe Organ Theory Granville
Pearl Spaid Custer	Piano, Voice, Theory Milton

Name	Course	Address
Willis Sylvester Drake	Violin	Vandergrift
Marie Louise Gutelius	Voice, Theory	Millheim
Helen Felecia Kitlowski	Piano	Nanticoke
Welles Norwood Lowry	Voice	Carbondale
Emma Valeria Matz	Voice, Supervisor Theory	Shillington
Raymond Hall Miller	Piano, Theory	Salem, N. J.
Mary Kathryn Phlegar	Piano, Theory	Milton
Helen Marie Powell	Piano, Theory, Voice Supervisor	Bivalve, N. J.
Mrs. Harry Schaeffer	Piano, Supervisor Theory	Lewisburg
Winifred Marie Smith	Piano	New Berlin
Miriam Harp Stanger	Supervisor, Piano Theory	Glassboro, N. J.
George Felter Wendell	Voice	Honesdale

## SECOND YEAR

Name	Course	Address
Marian Ayars	Piano	Millville, N. J.
Jennie Banks	Piano	Lewisburg
Eleanor Ballentine	Piano	Lewisburg
Olive Winifred Billhime	Piano	Turbotville
Dorothy Keiser Blair	Piano	Mifflinburg
Elinor Breisch	Piano, Pipe Organ	Ringtown
Kenneth Lorne Coper	Voice	Williamsport
George Edward Danyluk	Voice	Buffalo
Gladys Emrick	Piano, Theory	Shamokin
Donald Joseph Gensemer	Voice	S. Williamsport
William Marvin Groce	Violin	Selinsgrove
Helen Rebecca Grove	Piano	Lewisburg
Alford Herbert Haslam	Voice	Palmerton
Mildred Alice Hayden	Voice	Greensburg
Theodore Heysham, Jr.	Violin	Norristown
Mary Ellen Howe	Pipe Organ	Danville
Jean Pearl Johns	Violin	Cresson
Lawrence Myron Kimball	Voice	Vineland, N. J.
Julia Agnes Kistler	Piano	Mifflinburg
Kathleen Kleckner	Piano	Mifflinburg
Gearldine Grace Lagerman	Piano	New Columbia

Name	Course	Address
Helen Esther MacFarland	Violin	Watsontown
Estella Fern McNeal	Violin, Theory	Nescopeck
Margaret Beatrice Mettler	Piano	Elysburg
Catherine Elizabeth Mincemoyer	Piano, Theory	Montgomery
Margaret Morgan	Piano	Blakely
Charles Archibald Munro	Violin	Rossiter
Elma Elnora Reitz	Piano, Theory	Shamokin
Meribel Ritter	Piano	Muncy
Sara Rothenburg	Violin, Theory	Sunbury
Ellen Virginia Scott	Piano	Oakbourne
Amorita Muriel Sesinger	Voice	Pitman, N. J.
Nina Grace Smith	Pipe Organ	Dawson
Elizabeth Avis Speakman	Voice, Pipe Organ	Williamsport
John Edwin Steely	Violin	Lewisburg
Mary Anne Fulton Stephens	Pipe Organ	Johnstown
Martha Geneva Thomas	Piano	Leiwisburg
Charlotte Wilson Van Cleaf	Voice	Stockholm, N. J.
Miriam Tilge Van Valzah	Piano	Lewisburg
Mary Elizabeth Weeter	Vioce	New Bloomfield
Roland Morris Wendell	Voice	Philadelphia
Maude Bawford Westcott	Piano, Voice, Theory	Bridgeton, N. J.
	Supervisor	
Grace Evelyn Woods	Piano	Milton

## FIRST YEAR

Name	Course	Address
Anna Kathryn Althouse	Voice	Wyomissing
Mary Ethel Bailey	Piano	Latrobe
Nellie Carrol Balliet	Voice	Nanticoke
Catharine Baxter	Piano	Allenwood
Lamen Leroy Beck	Piano	Loganton
Harold Wesley Boyer	Voice	Lewisburg
Alice Mabel Bridge	Theory	Jersey Shore
Evelyn Brubaker	Voice	Mifflinburg
Sara Jane Burke	Piano, Voice, Theory	Plymouth
	Supervisor	
Josephine Campbell	Piano	Allenwood
Katherine Campbell	Piano	Allenwood
Pearl Marguerite Chamberlain	Voice, Supervisor	Downingtown
	Theory	

Name	Course	Address
Lawrence Rondell Cherrington	Voice	Bloomsburg
Richard Colestock	Piano	Lewisburg
Bertha Ella Cupp	Voice	S. Williamsport
Forest Franklin Dagle	Theory	Northumberland
Florence Turner Dare	Voice	Bridgeton, N. J.
Darle Faye Davis	Piano	Allenwood
Stella Domzalski	Piano	Nanticoke
Edna Kremer Fetter	Voice	Milton
Elizabeth Romaine Fisher	Voice	Watsontown
Mrs. Ella Follmer	Voice	Milton
Dorothy Fox	Piano	West Milton
Hattie Sophia Gamber	Voice	Lewisburg
William Leighton Herbst	Piano	Lewisburg
Althea Robbins Hoffman	Piano, Theory	Port Norris, N. J.
Eleanor Orwig Hopp	Piano	Mifflinburg
Anna Horoschak	Piano	Perth Amboy N. J.
Kathryn Elizabeth Hower	Piano, Voice, Theory	Milton
Sara Elizabeth Jones	Voice	Shamokin
Arnold Oakley Kenyon	Voice	Doylestown
Miriam Irene Loveman	Piano	Milton
Elizabeth Ann Marsh	Piano	Milton
Grace Marsh	Piano	Milton
Mildred Megahan	Voice	Milton
Ruth Moody	Piano	Milton
Sarah Moody	Piano	Milton
Virginia Moody	Piano	Milton
Benjamin Stanley Moore	Voice	Pitman, N. J.
Helen Moore	Piano	Milton
Katherine Moore	Piano	Milton
Lyman Harick Musser	Voice	Lewisburg
Martha Persing	Piano	Allenwood
Mary Ann Porter	Voice	Oil City
Mae Averyl Pysher	Piano, Theory	Allenwood
Janice Raikes	Voice	Philippi, W. Va.
Phoebe Margaret Reinhart	Voice	Milton
Helen Snyder Shipman	Piano	Sunbury
Bertha Louise Smith	Voice	Philadelphia
Ethelwynne Mae Smith	Voice	Lewisburg
Samuel Whitson Smith	Piano, Voice	Mifflinburg
Carrie Catherine Smithgall	Piano	Montroseville
Miriam Stocker	Piano	Milton



Name	Course	Address
Mrs. Dorothy Sumner	Voice	Milton
Emily Van Dyke	Voice	Sunbury
Mildred Frances Walker	Piano	Farmingdale, N. J.
Martha Sevilla Walters	Piano	New Berlin
Prudence Lumetta Walters	Piano	Lewisburg

## SUMMARY

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Total Number of Lessons .....	451
Pupils .....	131

## GRADUATES, CLASS 1921

Name	Course	Address
George Hobart Brown	Voice	Morristown, N. J.
Louise Frances Coombs	Piano, Theory	Philadelphia
Lois Margaret Cruse	Theory, Teaching course in Piano	Picture Rocks
Maybelle Ellyn DeSilva	Organ, Theory	Oxford
Homer Titus Eaton	Voice	Erie
Claire Gift	Voice	Milton
Marguerite Caroline Hartman	Voice	Danville
Cecil McKee Hazen	Voice, Supervisor Theory	Turtle Point
Belva Charlotte Holdren	Supervisor, Theory	Paxinos
Carolyn Julia Hunt	Voice	Lewisburg
Florence May Konopka	Organ, Supervisor Theory	Shamokin
Mittie Deborah Mark	Organ	Lewisburg
Raymond Hall Miller	Organ	Salem, N. J.
Verna Elizabeth Moyer	Voice	Lewisburg
William Patterson Moyer	Teacher's Course in Voice	Lewisburg
Rachel Mary Reed	Supervisor, Theory	Maplewood, N. J.
Mary Cooper Rhoads	Piano, Theory	Sunbury
Nelson Samuel Roundsley	Voice	Millerstown
Edythe Susanne Statler	Voice	Johnstown
Roy Bratton Stine	Violin	Tyrone
Ada Pauline Thomas	Voice, Supervisor, Theory	Pleasantville, N. J.

## DESIRABLE GIFTS

To persons willing to make contributions for Christian education, the following are suggested :

- (a) Professorships can be endowed for \$60,000 each.
- (b) Fellowships can be endowed for \$10,000 each.
- (c) Scholarships can be endowed by a gift of \$1,000 to \$5,000 each, the income to be given toward the expenses of the student. The income is estimated from the average income of the funds of the Institution, and is applied only in the year in which it falls due.
- (d) Additions can be made to the Loan Fund which has been established. The interest from this is loaned to students, the principal being kept intact.
- (e) A fund for the Retirement of Professors, who have completed the natural period of active service.

Each of these forms of beneficence will bear and perpetuate the name of the donor or of the person designated by him.

## FORMS OF BEQUEST

To persons desiring to aid in increasing the efficiency of the University in the work of preparing young men and young women for usefulness, the following forms of bequest are recommended :

### GENERAL

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of..... Dollars for general purposes, according to the Act of Assembly, incorporating the same ;

### A SPECIAL PURPOSE

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of ..... Dollars for the establishment of a professorship, fellowship, scholarship, loan fund, or retirement fund, to bear and perpetuate the name of ..... forever.

## ANNUITIES

Gifts are accepted by the University upon which it agrees to pay an annuity during the life of the donor.

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5th  
22/23

# Bucknell University Bulletin



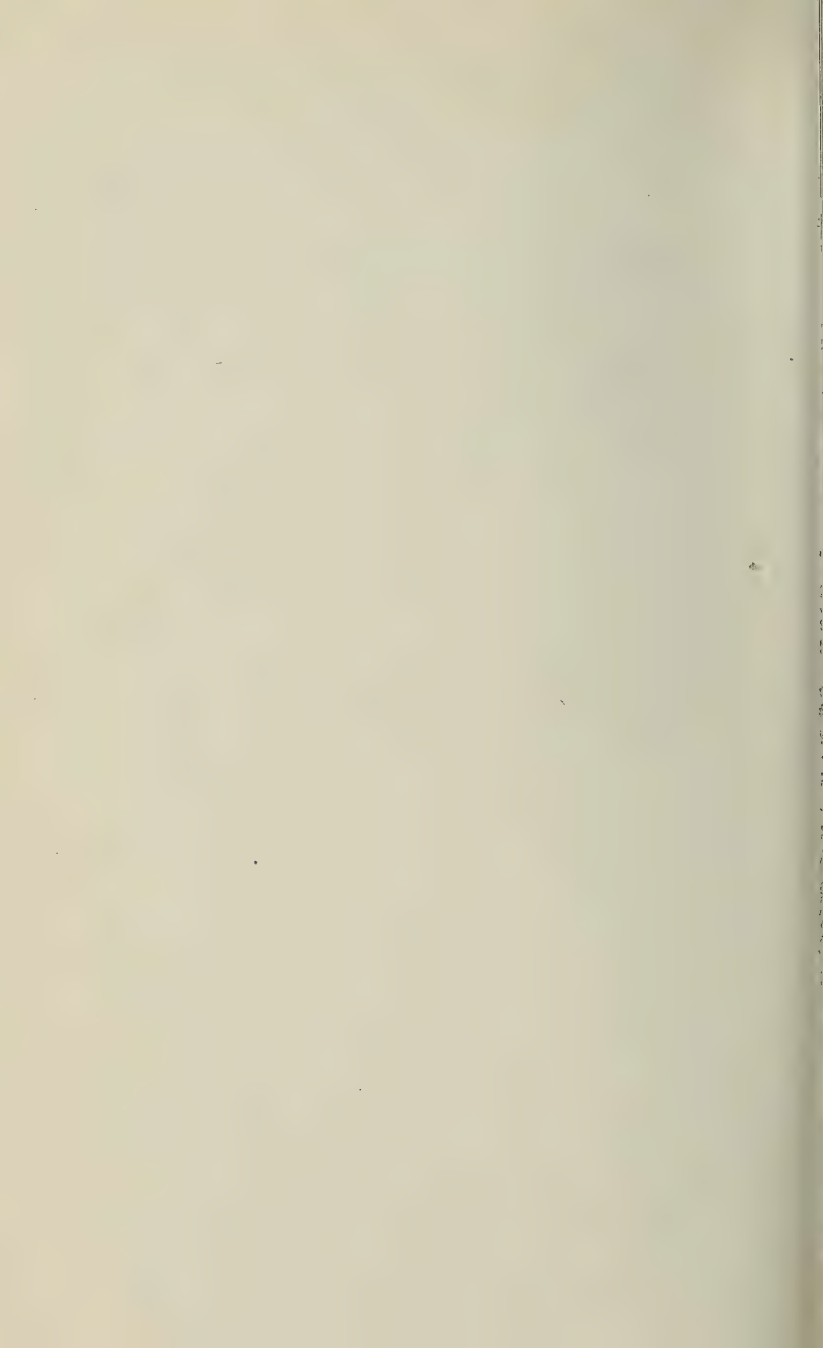
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1922--1923









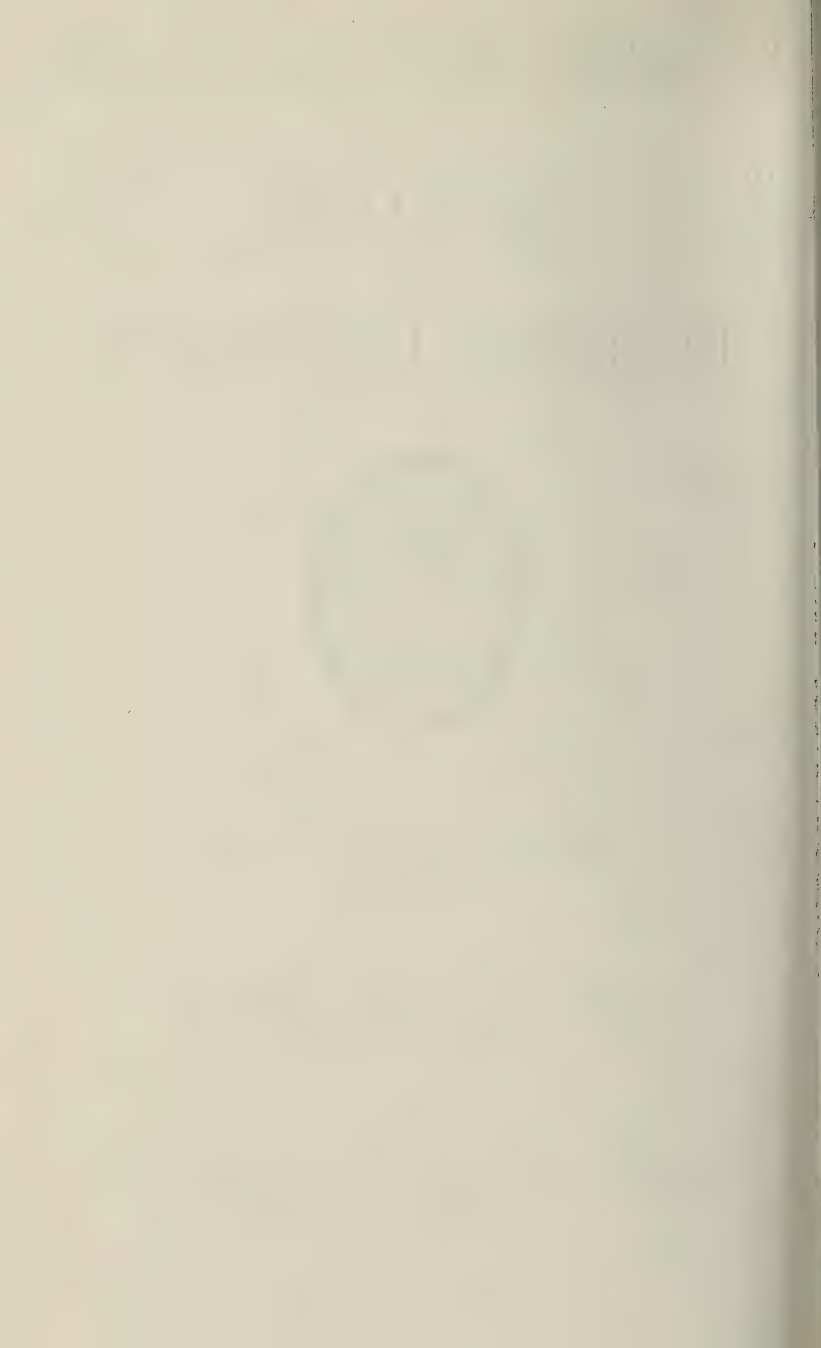
CATALOGUE  
OF  
BUCKNELL UNIVERSITY



SEVENTY-THIRD YEAR  
1922-1923

Published Bi-Monthly by Bucknell University,  
Lewisburg, Pennsylvania

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Bird's Eye View of the University

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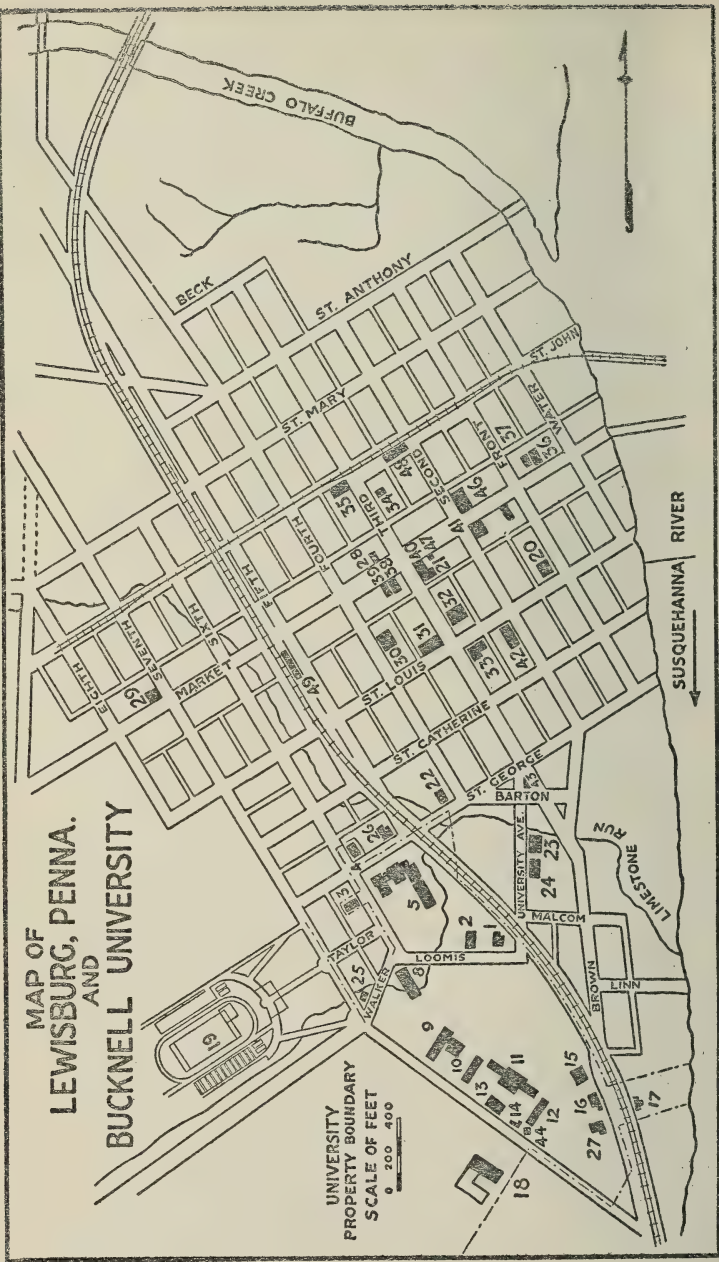
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# MAP OF LEWISBURG, PENNA. AND BUCKNELL UNIVERSITY

UNIVERSITY  
PROPERTY BOUNDARY  
SCALE OF FEET  
0 200 400



## University Property

1. The President's Residence
2. Bucknell Hall
3. Bower House
4. Wolfe House
5. Women's College
8. Chemical Laboratory
9. Bucknell Recitation Hall and The First Building
10. West College
11. Main Building
12. East College
13. Carnegie Library
14. Observatory
15. Tustin Gymnasium
16. Power House
17. Foundry
18. Engineering Building
19. New Athletic Field

## Fraternities

20. Lambda Chi Alpha
21. Phi Kappa Psi
22. Sigma Alpha Epsilon
23. Kappa Sigma
24. Phi Gamma Delta
25. Sigma Chi
26. Delta Sigma

## Churches

30. Evangelical
  31. Baptist
  32. Methodist Episcopal
  33. Lutheran
  34. Christian
  35. Reformed
  36. Presbyterian
- 
37. Himmelreich Library
  38. Post Office
  39. Union National Bank
  40. Lewisburg Trust and Safe Deposit Co.
  41. Lewisburg National Bank
  42. Court House
  43. Soldiers and Sailors Monument.
  44. College Inn
  46. Cameron House
  47. Steininger's Cafe
- 
48. Pennsylvania R. R.
  49. Reading R. R.

## Railway Stations

# GENERAL CALENDAR

1923—1924

1923

February

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>			

March

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>

April

S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>				

May

S	M	T	W	T	F	S
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	

June

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	
<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>

September

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>						

October

S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>			

November

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	

December

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>	<b>31</b>					

1924

January

S	M	T	W	T	F	S
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>		

February

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	
<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	

March

S	M	T	W	T	F	S
						<b>1</b>
<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>	<b>31</b>					

April

S	M	T	W	T	F	S
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			

May

S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>

June

S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>				

Dates printed in bold-faced type are those upon which the College is in session.

# COLLEGE CALENDAR FOR 1923-1924

## 1923

January 3.....Wednesday-12:30 P.M.-Christmas recess ends  
January 31.....Wednesday-Final Examinations end  
January 30-31....Tuesday and Wednesday-Enrolment of all students  
February 1.....Thursday-8:00 A.M.-Second semester begins  
February 22.....Thursday-Holiday  
March 28.....Wednesday-12:00 M.-Spring recess begins  
April 4.....Wednesday-12:30 P.M.-Spring recess ends  
May 30.....Wednesday-Holiday  
June 8.....Friday-Final Examinations end  
June 9.....Saturday-Alumni Day  
June 10.....Sunday-Baccalaureate Sunday  
June 11.....Monday-Annual Commencement

## SUMMER VACATION

September 17-18..Monday and Tuesday-Registration of new students and enrolment of all students  
September 19....Wednesday-8:00 A.M.-First semester begins  
November 1.....Thursday-Last Day for registration of graduate students  
November 28....Wednesday-12:00 M.-Thanksgiving recess begins  
December 3.....Monday-12:30 P.M.-Thanksgiving recess ends  
December 14.....Friday-12:00 M.- Christmas recess begins

## 1924

January 2.....Wednesday-12:30 P.M.-Christmas recess ends  
January 31.....Thursday-Final Examinations end  
January 30-31....Wednesday and Thursday-Enrolment of all students  
February 1.....Friday-8:00 A.M.-Second semester begins  
February 22.....Friday-Holiday  
April 16.....Wednesday-12:00 M.-Spring recess begins  
April 23.....Wednesday-12:30 P.M.-Spring recess ends  
May 30.....Friday-Holiday  
June 13.....Friday-Final Examinations end  
June 14.....Saturday-Alumni Day  
June 15.....Sunday-Baccalaureate Sunday  
June 16.....Monday-Annual Commencement

## SUMMER VACATION

September 15-16..Monday and Tuesday-Registration of new students and enrolment of all students  
September 17....Wednesday-8:00 A.M.-First semester begins

## CORPORATE RIGHTS

The University was incorporated with full university powers by the Legislature of Pennsylvania in an Act approved by the Governor on the fifth day of February, 1846. The management of the University is committed to a Board of Trustees that is self-perpetuating. The Charter provides: "That said trustees shall not for any cause, or under any pretext whatever encumber by mortgage, or otherwise, the real estate or any other property of said institution: That no religious sentiments are to be accounted as a disability to hinder the election of an individual to any office among the teachers of the institution, or to debar persons from admittance as students, in any department of the University".

## ORGANIZATION

The University is composed of the College and of the School of Music.

## BENEFACTORS OF BUCKNELL UNIVERSITY

The total property of the Institution exceeds one million dollars. The productive endowment amounts to about six-hundred thousand dollars. All this property has been given by friends of education, numbering several thousand persons. Founders of the Institution, that is, Benefactors who have given ten thousand dollars or more have been: David Jayne, John Price Crozier, William Bucknell, Samuel Alrich Crozer, Harry Samuel Hopper, Harriet Bucknell Hopper, John D. Rockefeller, Catherine A. Wentz, Charles Miller, John J. Carter, Henry Kirke Porter, David Porter Leas, Andrew Carnegie, Louise Bucknell Little, Joseph Kerr Weaver, Franklin Mathews, Charles P. Vaughan, Rush H. Kress.

Patrons (those who have given one thousand dollars or more, but less than ten thousand) have been: Charles F. Ab-



bott, Ralph A. Amerman, E. A. Armstrong, Francis W. Ayer, Benjamin Bear, William P. Beaver, Martin Bell, Emma W. Bucknell, Washington Butcher, Simon Cameron, Levi B. Christ, Elisha A. Coray, William J. Coxey, Nettie Dunham Crary, Samuel J. Creswell, George K. Crozer, J. Lewis Crozer, Mrs. J. Lewis Crozer, Robert H. Crozer, John C. Davis, Thomas Y. England, Isaac Ford, Mrs. Isaac Ford, Benjamin Gartside, Mary W. Getter, Thomas A. Gill, Leroy Gleason, Calvin Green, Benjamin Griffith, Calvin A. Hare, John H. Harris, George Hyde, James Irving, Israel James, E. C. Jayne, Adam Johnston, John D. Johnson, William W. Keen, William B. Leas, Alexander M. Lloyd, Justin R. Loomis, Freeman Loomis, William H. Ludwig, J. C. McKinney, S. E. McVitty, Joseph Meixell, George Barron Miller, Geroge F. Miller, James Moore, James Moore, Jr., H. J. Mulford, Jacob G. Neafie, Christian Overholt, A. C. Overholt, Maria Overholt, George Porter, Jacob Reese, A. J. Rowland, J. C. Sibley, George M. Spratt, Orlando W. Spratt, W. H. Starbuck, Amos B. Still, James B. Stephenson, John B. Stetson, James S. Swartz, Francis J. Torrance, Ernest L. Tustin, N. Stewart Wall, Charles S. Walton, Martha England Walton, Thomas Wattson, Samuel Wolf, Simon P. Wolverton, S. D. Young, Roy G. Bostwick, John T. Judd, Anna L. Reilly, S. Lewis Ziegler, Harold N. Cole, Henry L. Fonda, Charles A. Lindemann.

By act of the Board of Trustees, the names of Founders and Patrons will be recorded in the Annual Catalogue of the University forever.

### A MOVEMENT TO INCREASE FUNDS

The Board of Trustees is engaged in a movement which is intended to add a million dollars to the endowment and to secure a half million for additional equipment.



## THE BOARD OF TRUSTEES

---

### OFFICERS

- JAMES SIMMONS SWARTZ, A.M., Chairman  
11 Broadway, New York, N. Y.
- JOHN WARREN DAVIS, A.M., B.D., LL.D., Vice-Chairman  
P. O. Building, Trenton, N. J.
- OLIVER JOHN DECKER, A.B., Secretary  
Trust Building, Williamsport, Pa.
- JOHN THOMAS JUDD, A.M., D.D., Treasurer  
University Avenue, Lewisburg Pa.

### MEMBERS

- |  |                 |
|--|-----------------|
| RALPH ALONZO AMERMAN                     | Scranton        |
| ROY GRIER BOSTWICK, A.M., LL.B.          | Pittsburgh      |
| MILTON G. EVANS, A.M., D.D., LL.D.       | Chester         |
| EDWARD McVITTY GREENE                    | Mount Union     |
| JOHN HOWARD HARRIS, Ph.D., LL.D.         | Lewisburg       |
| HARRY BOARDMAN HOPPER, B.S.              | Philadelphia    |
| LINCOLN HULLEY, Ph.D., Litt.D., LL.D.    | Deland, Fla.    |
| ALBERT WILLIAMS JOHNSON, A.B.            | Lewisburg       |
| JOHN D. JOHNSON                          | Philadelphia    |
| RUSH HARRISON KRESS, Ph.B.               | New York, N. Y. |
| EDWARD F. L. LOTTE                       | Paterson, N. J. |
| JOHN HENRY MACALPINE                     | Pittsburgh      |
| CHARLES MILLER, A.M.                     | Franklin        |
| SPENCER KENNARD MULFORD                  | Philadelphia    |
| FRANK WILLIAM PADELFORD, D.D.            | New York, N. Y. |
| LOUIS WILLIAM ROBEY, A.B., LL.B.         | Philadelphia    |
| *LEROY STEPHENS, A.M., D.D.              | Lewisburg       |
| CHARLES PARKER VAUGHAN, Sc.D.            | Philadelphia    |
| RAYMOND M. WEST, A.M., D.D.              | Lewisburg       |
| CLARENCE ANDREW WEYMOUTH, Sc B.          | Scranton        |
| SAMUEL LEWIS ZIEGLER, M.D., Sc.D., LL.D. | Philadelphia    |

\* Deceased

---

### MEETINGS OF THE BOARD

The annual meeting is held in Lewisburg on the Friday preceding Commencement Sunday.

The semi-annual meeting is held in Philadelphia at a date chosen by the Board.

## COMMITTEES OF THE BOARD

---

### COMMITTEE ON INSTRUCTION

J. W. Davis, Chairman

R. A. Amerman

Lincoln Hulley

O. J. Decker

F. W. Padelford

M. G. Evans

E. W. Hunt, ex officio

---

### COMMITTEE ON FINANCE

H. B. Hopper, Chairman

R. G. Bostwick

S. K. Mulford

J. W. Davis

L. W. Robey

Rush H. Kress

C. P. Vaughan

E. F. L. Lotte

E. W. Hunt, ex officio

---

### COMMITTEE ON BUILDINGS AND GROUNDS

J. T. Judd, Chairman

E. M. Greene

Charles Miller

A. W. Johnson

S. L. Ziegler

J. H. MacAlpine

E. W. Hunt, ex officio

---

### COMMITTEE ON PUBLICATIONS

\_\_\_\_\_, Chairman

M. G. Evans

E. M. Greene

E. W. Hunt, ex officio

## PRESIDENTS OF THE UNIVERSITY

1846-1851 STEPHEN W. TAYLOR, LL.D.

1851-1857 HOWARD MALCOM, D.D., LL.D.

1858-1879 JUSTIN ROLPH LOOMIS, Ph.D., LL.D.

1879-1888 DAVID JAYNE HILL, LL.D.

1889-1919 JOHN HOWARD HARRIS, Ph.D., LL.D.

1919- EMORY WILLIAM HUNT, D.D., LL.D.

# BUILDINGS AND EQUIPMENT

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## THE MAIN COLLEGE

The Main College is situated on a hill one hundred feet above the Susquehanna River. It was erected in 1859. It was designed by Thomas U. Walter, LL.D., architect of the dome and wings of the Capitol at Washington, D. C. It is Grecian in style. The building has a facade of three hundred and twenty feet. The central portion is eighty feet square, and is strengthened in front by four massive columns. On the first floor are six recitation rooms. On the second floor are the Museum of Natural History and recitation rooms.

On the third floor is Commencement Hall, with a seating capacity of fifteen hundred.

The Wings on the eastern and western sides, respectively, of the Main Building, are each one hundred and twenty feet in length and four stories in height. They are used for dormitory rooms, recitation rooms, and offices. The dormitory rooms have been thoroughly modernized. The West Wing was erected in 1850; the East Wing in 1859.

## THE WEST COLLEGE

The West College was erected in 1900. It is four stories in height, and is built of brick trimmed with brownstone. It contains ninety-seven rooms. One of the rooms is a hall for the use of the Young Men's Christian Association; the others are used for dormitory rooms.

## THE EAST COLLEGE

The East College was erected in 1907. It is built of brick, trimmed with brownstone. The first floor contains the Electrical Laboratory, the Physical Laboratory and reci-

tation rooms. The top floor is used for draughting rooms. The other four floors contain one hundred and twelve dormitory rooms.

### THE FIRST BUILDING

The First Building on College Hill was erected in 1846. It is fifty feet in width by eighty feet in length, and three stories in height. The building will be used as a Laboratory of Biology.

### BUCKNELL RECITATION HALL

The Bucknell Recitation Hall was erected in 1889. It is contiguous to the First Building and is connected with it by a covered passageway. This building contains both recitation rooms and laboratories.

### BUCKNELL HALL

Bucknell Hall was erected in 1886. It is the Chapel of the College.

### THE CARNEGIE LIBRARY

The Carnegie Library was given by the Honorable Andrew Carnegie, D.C.L., in the year 1905. The building is sixty-four feet by ninety feet. It is built of brick, trimmed with brownstone. The center, thirty feet by ninety, is used as a reading room. At the height of sixteen feet there is a gallery extending around the room. The sides, each fifteen feet by ninety, are divided, on the first floor, into rooms for special collections and for offices. The second floor will be used for stack rooms. The building will accommodate about one hundred thousand volumes.

### THE OBSERVATORY

The Observatory was erected in 1887 and enlarged in 1905. It is designed for the use of students in Practical Astronomy. The equipment consists of a Clark Equatorial

Telescope of ten inches aperture and  $12\frac{1}{2}$  feet focal length, furnished with a position Micrometer and the usual accessories; a Spectroscope, with prism and grating by Brashear; a three-inch prismatic Transit, with a nine-wire movable Micrometer, a Fauth Chronograph with Bond Spring Governor; a Waldo Precision Clock for siderial time, with mercurial compensation, break circuiting apparatus; Daniell's battery and telegraph sounders; a Seth Thomas Clock for solar time; a Sextant; Celestial globes and maps, and standard works on Theoretical and Practical Astronomy.

### THE CHEMICAL LABORATORY

The Chemical Laboratory has been greatly improved both in usefulness and appearance by an addition of forty-five feet to its length.

On the ground floor there are the chemical preparations, agricultural, metallurgical, and organic laboratories; combustion room, stock room, and a dark room.

On the first floor there are the lecture hall, at the south end of the building, with seating capacity for one hundred and ten, and two freshmen laboratories, each fitted to accommodate ninety-six students.

On the second floor there are the physical, the quantitative, the organic, and the home economics laboratories; a recitation room, balance room, library and two offices. The building is ventilated according to modern methods.

### THE ENGINEERING BUILDING

The Engineering Building, when completed, will be in the shape of a hollow square having a frontage of 192 feet and a depth of 134 feet, and containing about 58,000 square feet of floor space.

The first wing, which has been constructed, is primarily for the use of the Mechanical Engineering Department.



On the ground floor there are a well-equipped model power plant, complete in every respect, consisting of a 100 H. P. water tube, oil burning, high pressure boiler, with all auxiliaries necessary for full operation; steam engines, a turbo generator set, condensing outfit, pumps and other apparatus for carrying on the experiments usually taught in Steam Engineering; a laboratory for carrying on work in the field of automotive and internal combustion engines and a special laboratory for performing experiments in hydraulics and cement testing.

On the first floor there are the pattern shop, machine shop, tool room, and one recitation room.

On the second floor there are two good-sized recitation rooms, two large drawing rooms, a lecture room and an office for general use of the teachers engaged in the Department of Mechanical Engineering.

### THE FOUNDRY

The Foundry was erected in 1915. It is built of brick and is fitted up with appliances requisite for the courses in molding and casting.

### HEATING AND LIGHTING PLANT

The Heating and Lighting Plant was erected in 1901. From this central plant all heat, light and power used by the University are obtained.

### THE PRESIDENT'S HOUSE

At the entrance to the Campus from University Avenue is located the President's house.

### THE GROFF HOUSE

The Groff house, with the adjoining land, formerly the property of Professor George G. Groff, is now the property of the University.

## THE TUSTIN GYMNASIUM

The Tustin Gymnasium was erected in 1890. The first story is built of stone and contains an office for the director, lockers, dressing rooms, and shower baths. The second story is built of brick, rising twenty-two feet from the main floor to the roof line. At the height of twelve feet a running-track gallery, six feet wide, surrounds the room.

## THE ATHLETIC FIELD

The Athletic Field is conveniently located at the foot of "College Hill". Around the space devoted to football and baseball, runs a quarter-mile track. Close to the track on the southern side is the Tustin Gymnasium, easily accessible to students and trainers.

## BUILDINGS OF THE WOMEN'S COLLEGE

The buildings and campus of this department are set apart for the use of women taking courses in the College and in the School of Music.

The Main Building was erected in 1857; the South Wing, in 1870. It contains an office for the Dean, a reception room, parlors, living-room, dining-hall, and dormitory rooms. On the third floor of this building is the Laboratory for the department of Home Economics.

The Bucknell Cottage was erected in 1889. It stands to the southwest of the Main Building, and is connected with it by an enclosed passageway. It is used as a dormitory for women.

A new residence hall for women was erected in 1905. The gymnasium occupies the upper story of this building, and has a floor surface of over four thousand feet.

Two additional residence buildings adjoining the campus have recently been secured. Each of these accommodates about twenty college women.

The Campus of the Women's College is separated from the main College grounds by Loomis Street.

## LABORATORIES

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### The Biological Laboratories

The Biological Laboratories are equipped with apparatus for carrying on the work in the Organic Sciences. Rooms have been equipped for the various courses and are well supplied with microscopes, microtomes, incubators, and the necessary reagents. The laboratories are also supplied with collecting apparatus, books of reference and other necessary appliances. New apparatus is added as occasion demands. The work in Zoology is illustrated by marine and fresh water forms, skeletons and mounted specimens. An anatomical museum of dissections has been built up in the last few years by the department of Zoology.

The Physiological Laboratory has recently been equipped with stimulating apparatus, kymographs, heart and muscle levers, spirometers, pneumographs, ergographs and other apparatus suitable for a well-rounded laboratory course in beginning or advanced work.

Material for Human Anatomy is received from the State Anatomical Board, and each student has the opportunity to dissect the human body. The student in Microscopic Anatomy has a good supply of paraffin and celloidin blocks. The work is illustrated with microscopic slides, alcoholic material and French wax models. Each student must provide himself with dissecting instruments.

A large Bacteriology Laboratory and a room for the preparation and sterilization of media have been recently furnished. The new equipment installed in these laboratories includes: an autoclave, Arnold sterilizers, an electric instrument sterilizer, Lautenschlaeger hot air sterilizers, constant temperature water baths, constant temperature electric incubators, a high power International electric centrifuge, a shaking machine for preparation of bacterial

emulsions, a Jewell type automatic water still, blast lamps, etc. Each laboratory is supplied with running hot and cold water, and with gas and electric service.

### The Electrical Laboratory

The Electrical Laboratory is located on the ground floor of East College and consists of the dynamo laboratory proper, and the instrument room for the safe keeping of portable and precision apparatus. The lecture and demonstration room adjoins the laboratory. These combined rooms furnish a total floor space of approximately 2,600 square feet and contain the apparatus for the laboratory work of the various courses in electrical engineering.

The direct current apparatus includes several direct current motor equipped generating sets; shunt, compound, and series motors with prony brake for testing purposes, and numerous other special devices for engineering and commercial tests. A 25 KW engine driven direct current generator is available for power plant efficiency tests and other experimental work. This apparatus is so chosen and erected as to make a detailed study complete and convenient.

The alternating current apparatus consists of various types of single phase, two phase, and three phase generators, single and polyphase induction motors, rotary converter, synchronous motors, and all necessary measuring instruments for performing engineering and commercial tests. Apparatus used is of frequencies varying from 25 cycles to 500 cycles.

The high tension equipment includes all the transformers, most of which are of the commercial type, others are special in their design and construction, and were built by the students in the department. The equipment also includes a Tesla coil with a thirty-six inch spark. This was built by the students of the department and operates with

remarkable success. A complete oscillograph equipment with all the necessary accessories for the study of phase relations and higher harmonics in alternating current circuits forms a very valuable adjunct to the laboratory equipment.

The apparatus for the work in telegraphy and telephony comprises the essentials for simple telegraph circuits, duplex, diplex and quadruplex telegraphy including relays and repeaters. Simple magneto apparatus and several standard types of common battery apparatus are available for study in telephony.

A standard 1 KW radio set with 225-foot aerial, having a transmitting radius of 100 to 1,000 miles, depending upon conditions, furnishes an excellent equipment for students in this line of work. This is also equipped with various forms of receiving devices, and a wave meter for studying the wave lengths of distant stations.

### **The Chemical Laboratory**

The Chemical Laboratory building is used exclusively by the Department of Chemistry and Chemical Engineering. It is equipped with apparatus and laboratories suitable to the courses offered.

### **The Physical Laboratory**

The Physical Laboratory occupies the entire North end and, jointly with the department of Electrical Engineering, the South end of the East College. The five rooms in the North end are devoted chiefly to the study of mechanics, heat, light, and sound. They are fully equipped with permanent shelves and piers for carrying delicate apparatus, and also many portable tables for general purposes. They are well lighted and supplied with water, gas, and electricity.

The equipment of the mechanics laboratory includes certified standards for measuring time, length and mass, and



includes a seconds pendulum, a standard meter, cathetometers, traveling microscopes, precision balances and weights.

For the study of heat, the apparatus includes a complete set of mercury-in-glass thermometers, air thermometers, platinum resistance thermometers and auxiliary apparatus, thermo-couples, calorimeters for the determination of the heat value of solid, liquid and gaseous fuels. Several types of apparatus are available for the determination of the Mechanical Equivalent of heat.

The light laboratory is equipped with a large number of lenses and mirrors, spectrometers and spectroscopes, including one by Brashear fitted with a Rowland grating of 14,438 lines to the inch, and a constant deviation type by Hilger with photographic attachment. The equipment is complete for the qualitative study of the spectra of solids, liquids, and gases. Several optical benches are fitted with different types of photometers, and one precision photometer, carrying a Lummer-Brodhun screen, is mounted for the study of electric lamps.

The electrical equipment includes a large number of galvanometers of the various types; standard cells; standards of resistance, capacity and inductance; several types of the Wheatstone bridge; the Carey-Foster bridge; Kelvin Double bridge; Kelvin Balance; Siemens Dynamometer; a large number of the Weston portable voltmeters and ammeters; several types of potentiometers from American and foreign makers. In connection with the Electrical Engineering department, much apparatus is available which is described under the equipment of that laboratory.

### **The Home Economics Laboratory**

The Home Economics Laboratory is located on the third floor of the Main Building at the Women's College.

The cooking laboratory is equipped for twenty-four students. A dining-room and kitchen are suitably furnished and used in connection with the planning and serving of meals.

The sewing room is on the second floor of the Bucknell Cottage. It is provided with sewing machines and other necessary equipment for the teaching of sewing.

### THE DRAWING ROOMS

The upper floor of the East College is devoted to Drawing. The rooms are lighted by sky-lights, and are fitted with locker and desk space for one hundred students. The center room is used for the Freshmen Drawing, the South room for Sophomore Drawing, the North room for Senior work in the Electrical Engineering course. The advanced drawing rooms for Civil and Mechanical Engineers are on the first floor of East College and the first floor of East Wing.

The drawing department is provided with a dark room for blue printing which has an electric printing machine, and is equipped for washing and drying the prints.

### THE MUSEUM

The University possesses good collections of illustrative material in Botany, Zoology, Histology, Geology and Mineralogy. Parts of these collections are kept in the laboratories and used in classroom work.

Since the erection of the Carnegie Library two large rooms in this building have been set aside as a Biological Museum. The collections of mounted birds and mammals have been transferred to these rooms. A special effort is being made to secure additions to this museum. Skeletons of vertebrates and skins of birds and mammals are especially desired.

The Geological Museum has been greatly enlarged during the past ten years, and many valuable specimens have been added.

During the past twenty-five years there has been built up a remarkable collection of Indian Relics. The collection includes some of the finest specimens from the Murray Nesbit collection, also the Gerner Collection from Muncy, Pa., besides thousands of specimens collected along the West Branch of the Susquehanna between Sunbury and Williamsport.

### THE LIBRARY

The general Library contains over forty thousand volumes, besides many thousand pamphlets. The Reading Room is connected with the Library and offers facilities for reading, studying, and writing. During term time both are open forenoon, afternoon and evening of each day, Sundays and holidays excepted. By the kindness of the Class of 1917, the Library is well lighted with electricity. Students in all departments have free access to the shelves, and may draw two books at one time and retain them for two weeks, with the privilege of one renewal, if desired. On special designation by instructors, certain books in constant use by classes are excepted from general circulation, during specified times, or during the continuance of the study.

For greater convenience of instructors and students, collections of special technical books are also kept in the Laboratories of the Biological, Physical and Organic Sciences, in the Astronomical Observatory, and in specially designated classrooms.

### ART COLLECTION

An Art Collection of paintings, engravings, heliotypes, photographs, bronzes and casts of sculpture has been accumulating for some time, and is accommodated in the Carnegie Library. Recent valuable additions include the Loomis Collection, gathered in Italy by the late President Justin Rolph Loomis, LL.D., the gift of his children, Andrew Gregg Loomis, Esq., and Mrs. Carrie Loomis Owens.

Bucknell University  
The College



# THE COLLEGE

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## OFFICERS OF ADMINISTRATION

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EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
President Emeritus

LLEWELLYN PHILLIPS, D.D.  
Dean

ANNA ROBERTA CAREY, A.M.  
Dean of Women

CHARLES ARTHUR LINDEMANN, A.M.  
Secretary of the Faculty

THERON CLARK, A. B.  
Registrar

JOSEPH ROBERTS WOOD, D.D.  
Assistant to the President

MARY HELEN HUNT, A.B.  
Recorder and Secretary to the President

---

ELIZA JOHNSTON MARTIN, Sc.M.  
Librarian

MARY STONER GRETZINGER  
Assistant to the Librarian

---

FRANK EUGENE BURPEE, A.M.  
Superintendent of Buildings and Grounds

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## FACULTY

---

EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
Professor of Philosophy

WILLIAM CYRUS BARTOL, A.M., Ph.D.  
Professor of Mathematics and Astronomy

FRANK ERNEST ROCKWOOD, A.M., LL.D., D.C.L.  
Professor Emeritus of the Latin Language and Literature



WILLIAM GUNDY OWENS, A.M.

Professor of Chemistry

THOMAS FRANKLIN HAMBLIN, A.M., LL.D.

New Jersey Professor of the Greek Language and Literature

\*WILLIAM EMMET MARTIN, A.M., L.H.D.

Professor of Logic and Sociology

NELSON FITHIAN DAVIS, Sc.D.

Professor of Biology

EPHRAIM MARSHALL HEIM, A.M., Ph.D.

Professor of Economics and Political Science

LLEWELLYN PHILLIPS, A.M., D.D.

John P. Crozer Professor of Education

HENRY THOMAS COLESTOCK, A.M., Ph.D.

Professor of History

CHARLES ARTHUR LINDEMANN, A.M.

Professor of Civil Engineering

FRANK MORTON SIMPSON, Sc.M.

Professor of Physics

WALTER KREMER RHODES, A.M., E.E.

Professor of Electrical Engineering

FLOYD GEORGE BALLENTINE, A.M., Ph.D.

Professor of the Latin Language and Literature

FRANK EUGENE BURPEE, A.M.

Professor of Mechanical Engineering

MARTIN LINNAEUS DRUM, A.M.

Professor of Surveying

NORMAN HAMILTON STEWART, A.B., Sc.M.

Professor of Biology

BENJAMIN W. GRIFFITH, A.M.

Professor of Romance Languages

GLENN VINTON BROWN, Ph.D.

Professor of Chemical Engineering

PAUL GEORGE STOLZ, A.M.

Professor of Music

ANNA ROBERTA CAREY, A.M.

Professor of Home Economics

LEO LAWRENCE ROCKWELL, A.M.

Professor of German and English

GEORGE FRED RASSWEILER, A.M., B.D., B.O.

Professor of Public Speaking

AMOS LEE HEROLD, A.M.

Professor of English Literature

OREL SAMUEL GRONER, A.B., Sc.M.

Associate Professor of Chemistry

OWEN GRIFFITH GROVES, A.M.

Associate Professor of English

HARRY SCHEIDY EVERETT, A.M., Sc.M., Ph.D.

Associate Professor of Mathematics and Astronomy

WILLIAM HILLIARD SCHUYLER, B.S. in Ch.E.

Assistant Professor of Chemistry

JOHN WINTER RICE, Sc.M.

Assistant Professor of Biology

GENEVIEVE BOLAND, A.M., Ph. D.

Assistant Professor of Romance Languages

ROY FRANCIS HOWES, A.M., LL.B.

Assistant Professor of Economics and Political Science

ARTHUR ST. CLAIR SLOAN, A.M.

Assistant Professor of Romance Languages

DAVID MOYER

Assistant Professor of Music

VORIS BLAINE HALL, Sc.M. in E.E.

Instructor in Physics

VERA COBER ROCKWELL, A.B.

Instructor in Spanish

JOHN STEINER GOLD, B.S., A.M.

Instructor in Mathematics

GEORGE ALLISON IRLAND, E.E.  
Instructor in Electrical Engineering and Drawing

GEORGE MERRILL KUNKEL, Sc.M. in M.E.  
Instructor in Mechanical Engineering

BENJAMIN JAMES WILSON, Sc.M. in M.E.  
Instructor in Mechanical Engineering

HARRY REDCAY WARFEL, A.M.  
Instructor in English

HAROLD AUGUSTUS SHAFFER, A.B., B.S. in E.E.  
Instructor in Electrical Engineering and Drawing

ANNIE COCKS CLARK, Ph.B.  
Instructor in Mathematics

MARION BRIGGS DAVIS, Sc.M.  
Instructor in Biology

OLIVE DOUGLASS, B.S. in H.E.  
Instructor in Dietetics

SARA KISTLER BROWN, B.S.  
Instructor in Chemistry

NOVELLO JONES, B.S. in H.E.  
Instructor in Household Arts

FRED STURGES BEERS, A.B.  
Instructor in English

MARION RIESS, A.B.  
Instructor in Spanish

HAROLD EDWARD MILLER, Sc.M.  
Assistant in Biology

REBA EVA MACKENTHUM, B.S.  
Assistant in Biology

## OTHER OFFICERS

NELSON FITHIAN DAVIS, Sc.D.

Curator of the Museum

PAUL GEORGE STOLZ, A.M.

Director of the School of Music

CLARA GOBLE SALE

Managing Dietitian

LEO LAWRENCE ROCKWELL, A.M.

Editor of the Alumni Monthly

CLARENCE EDWIN GLASS, Ph.B.

Director of Physical Education for Men

Graduate Manager of Athletics

AGNES RODMAN MACCANN

Director of Physical Education for Women

CLARA MAYE FERGUSON

Clerk

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## COMMITTEES OF THE FACULTY

## ADVANCED DEGREES

Professor Davis, Chairman

Professors Ballentine, Drum, Griffith, Rhodes, and the Registrar,  
ex officio

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## ADVANCED STANDING

Professor Drum, Chairman

Professors Everett, Owens, Sloan, and the Registrar, ex officio

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## ADMISSION AND REGISTRATION

Professor Rhodes, Chairman

Professors Boland, Colestock, Drum, Everett, Hamblin, Owens,  
Phillips, Rockwell, and the Registrar, ex officio

**ATTENDANCE AND STANDING**

Professor Simpson, Chairman

Professors Brown, Griffith, Groner, Heim, Lindemann, and Stewart

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**CATALOGUE**

Professor Ballentine, Chairman

Professors Carey, Groves, Phillips, Rhodes, Simpson, and the Registrar

---

**CHAPEL**

Professor Rice, Chairman

Mr. Hall

---

**CURRICULUM AND COURSES**

Dean Phillips, Chairman

Professors Ballentine, Bartol, Burpee, Carey, Davis, Herold, and Howes

---

**HONORARY DEGREES**

Professor Hamblin, Chairman

Professors Bartol and Phillips

---

**LIBRARY**

Professor Hamblin, Chairman

Professors Colestock, Howes, Rhodes, Stewart, and the Librarian ex officio

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**STUDENT ACTIVITIES**

Professor Drum, Chairman

Professors Carey, Rassweiler, Rhodes, Rockwell, Stewart, and Stolz

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**SELECTION OF COMMENCEMENT SPEAKERS**

Dean Phillips, Chairman

Professors Carey, Davis, Rassweiler, and Rhodes

# ADMISSION TO THE COLLEGE

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All applicants for admission should secure certificate blanks from the Registrar. These blanks should be filled out by the Principal of the preparatory school and returned by him to the Registrar as soon as possible after the close of the school year.

## Requirements

The requirement for admission is fifteen units of secondary school work. No student is admitted with less than thirteen units. A unit is a course of study pursued for a year, at least four periods a week of forty minutes each.

## Required Subjects

	Units
English .....	3
Algebra .....	1
*Geometry, Plane .....	1
*Geometry, Solid .....	1½
(Not required for admission to the Bachelor of Arts and Home Economics courses)	
Social Science, including History..	2
Natural Science .....	1
French, at least .....	2 or
German, at least .....	2 or
Greek, at least .....	2 or
Latin, at least .....	2 or
Spanish, at least .....	2

The remaining four and one-half or five units may consist of further work in the above subjects or other subjects in the courses of study in a first-grade high school.

\*Note: Entrance conditions in mathematics must be made up during the first semester of the Freshman year.



### Certificates

Applicants for admission who present approved certificates which represent the required and elective subjects named above will be admitted without further examination.

### Examination

Applicants for admission who do not present certificates are admitted by examination. This examination may be arranged for by writing to the Registrar of the University.

### Advanced Standing

A student applying for admission to advanced standing must present to the Registrar of the University the following papers duly signed by the Registrar of the institution from which he comes:

1. A detailed statement showing terms, hours and grades for all work accepted for admission at that institution and all the work completed there.

2. A letter of honorable dismissal.

A Normal School graduate, who is also a graduate of a four-year high school, may be given credit for not more than one year of college work. The standing of a student is determined by the Committee on Advanced Standing. The decision is made only after the student has done sufficient work at Bucknell University to give evidence of the quality of the credits presented. No student will be admitted to the college as a candidate for a degree in the undergraduate courses after the beginning of the Senior Year.

### Special Requirement in English

Attention is called to the following regulation concerning English:

Students will be registered for the regular freshman rhetoric course only conditionally. Those found by a practical test in the writing of simple English to be notably deficient in spelling, punctuation, grammar and paragraphing will be assigned to a special sub-freshman course. For this work no college credit will be allowed. Students, however, who show satisfactory improvement will be transferred to the regular college sections, in October, December, and February.

# GRADUATION FROM THE COLLEGE

## Degrees

The college offers courses leading to the degrees of Bachelor of Arts and Bachelor of Science.

### Requirements for the Degree of Bachelor of Arts

#### I. Prescribed Work

Candidates for the degree of Bachelor of Arts must complete the following courses:

	Credit Hours
English Composition.....	9
English Literature .....	3
Foreign Language .....	6
History .....	6
Mathematics 1, 2 .....	6
Philosophy .....	9
Public Speaking .....	4
Science.....	6
Fundamentals .....	1

By a credit hour is meant one recitation a week throughout a semester; two or three hours of laboratory work a week may be required for one credit hour. As a rule, a student may expect to spend three hours of time (including the class hour) for one hour of credit.

#### II. Majors and Minors

Subjects are arranged according to the following groups and divisions:

##### Group I

English

German

Greek and Latin

Romance Languages

## Group II

Bible

History and Political Science

Economics, and Sociology.

Philosophy and Education

## Group III

Biology

Chemistry

Mathematics

Physics

All students who are candidates for the degree of Bachelor of Arts are required to complete a Major and two Minors. A Major consists of six semester courses or eighteen semester hours in one division of a group; a Minor consists of three semester courses or nine semester hours in one division of a group. Neither a prescribed course nor a course of the Freshman or the Sophomore Year shall be counted toward a Major or a Minor.

The Minors, except by permission of the Dean, must be outside of the Group from which the Major is chosen.

The choice of the Major and the Minors must be registered before or during the second semester of the Sophomore Year and with the advice and the approval of the Dean and of the Professor or Professors in charge.

## III. Credits

Each candidate for the degree of Bachelor of Arts is required to complete at least one hundred and twenty-eight credit hours, not including physical education.

# IV. Conspectus of the Course Leading to the Degree of Bachelor of Arts

## FRESHMAN YEAR

L. stands for laboratory hours.

Cr. stands for credit hours.

First Semester	L.	Cr.	Second Semester	L.	Cr.
Prescribed:			Prescribed:		
English Composition 1		3	English Composition 2		3
Fundamentals 1		1	History 2		3
History 1		3	Mathematics 2		2
Mathematics 1		4	Public Speaking 2 or		2
Public Speaking 1 or		2	Public Speaking 8		2
Public Speaking 7		2	Electives:		
Electives:			French		3
French		3	German		3
German		3	Greek		3
Greek		3	Latin		3
Latin		3	Mathematics 4		3
Science			Science		
Biology 25 (Botany) or		5	Biology 26 (Botany) or		5
Chemistry 9 or		3	Chemistry 10 or		3
Physics 1, 11		3	Physics 2, 12		3
Spanish		3	Spanish		3
Total		16	Total		16

## SOPHOMORE YEAR

First Semester	Cr.	Second Semester	Cr.
Prescribed:		Prescribed:	
English Literature 1	3	English Composition 4	3
Electives:		Electives:	
Economics 1	3	Economics 2	3
French	3	French	3
German	3	German	3
Greek	3	Greek	3
Greek 9 (Greek Civilization)	3	Latin	3
Latin	3	Latin 10 (Roman Civilization)	3
Mathematics 11	3	Logic	3
Public Speaking		Mathematics 6	3
Science		Mathematics 10	2
Biology 1 or	5	Mathematics 12	3
Biology 25 (Botany) or	5	Public Speaking	
Chemistry or	3	Science	
Physics	3	Biology 2 or	5
Spanish	3	Biology 26 (Botany) or	5
		Chemistry or	3
		Physics	3
		Spanish	3
Total	16	Total	16

## JUNIOR YEAR

## SENIOR YEAR

	Cr.		Cr.
Philosophy 1, 6, 8	9	Major	9
Major	9	Minors	9
Minors	9	Electives	14
Electives	5		
	<hr/>		<hr/>
Total	32	Total	32

## V. Regulations

1. Sixteen credit hours are required in each semester. A student who has obtained an average of "A" in a semester may take more than sixteen hours in the following semester. No student may register for more than nineteen hours in a semester.

2. A total of four years' work (including preparatory work) in foreign language is required for graduation. Even if four years of foreign language are accepted for entrance a minimum of one year will be required in college. A student who begins a foreign language in college must pursue it for at least two years.

3. Ancient Civilization is prescribed for all students who do not pursue an ancient language.

4. The young women are required to take Physical Education in the Freshman, Sophomore, and Junior years.

## Requirements for the Degree of Bachelor of Science

The degree of Bachelor of Science is conferred on a candidate who has completed the course in one of the following technical departments: Biology, Chemical Engineering,

Civil Engineering, Electrical Engineering, Mechanical Engineering and Home Economics. The designation of the degree is Bachelor of Science in Biology, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering or in Home Economics.

### Electives

In the choice of electives the regulations pertaining to the choice of electives for the degree of Bachelor of Arts apply, as far as may be necessary, to the choice of electives for the degree of Bachelor of Science.

### Conspectus of Courses Leading to the Degree of Bachelor of Science

Cl. stands for class-room hours.

L. stands for laboratory hours.

Cr. stands for credit hours.

### BIOLOGY

#### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 5	3	4	5	Chemistry 6	3	4	5
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Drawing 1		4	2	Drawing 2		4	2
Modern Language	3		3	Modern Language	3		3
Total			18	Total			18

#### SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 25	3	4	5	Biology 26	3	4	5
Chemistry 21	2	2	4	Chemistry 22	2	2	4
English Literature 1	3		3	Biology 14	3	4	5
Biology 17	1		1	Biology 18	1		1
Biology 1	3	4	5	Biology 2	3	4	5
Total			18	Total			20



## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 7	3	4	5	Biology 8	3	4	5
Physics 1	3		3	Physics 2	3		3
Physics 13		4	2	Physics 14		4	2
Philosophy 1	4		4	Biology 24	2		2
Electives:				Electives:			
Modern Language	3		3	Biology 6	1	4	3
Chemistry 15			5	Philosophy 8	3		3
Biology 3		4	2	Biology 4		4	2
Biology 31	3		3	Biology 28	3	4	5
Biology 15	3	4	5	English Literature	3		3
Biology 9	1	4	3	Modern Language	3		3
				Biology 10	1	4	3
				Chemistry 32			4
Total			18	Total			18

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 19	3	4	5	Biology 32	3		3
Biology 29	3	4	5	Electives:			
Electives:				Biology 12	1	4	3
Biology 27	3		3	Biology 22	3	4	5
Biology 9	1	4	3	Biology 30	3	4	5
Other electives from the				Chemistry 32			4
Junior and Senior				Other electives from the			
Electives of the A. B.				Junior and Senior			
Course				Electives of the A. B.			
				Course			
Total			18	Total			18

## CHEMICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 3	3	4	5	Chemistry 4	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	German (or French)	3		3
German (or French)	3		3	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Public Speaking	2		2	Public Speaking	2		2
Total			20	Total			20

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 17	3	4	5	Chemistry 18	3	4	5
Chemistry 13	2		2	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineer-			
Mechanical Engineer-				ing 16		4	2
ing 15		4	2	Physics 4	3		3
Physics 3	3		3	Physics 14		4	2
Physics 13		4	2				
Total			18	Total			16

# JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 33	1		1	Chemistry 34	1		1
Chemistry 19	3	4	5	Chemistry 20	3	4	5
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Physics 5	2	6	5	Physics 6	2	6	5
Electives:				Electives:			
Drawing 5	1	2	2	Drawing 6	1	2	2
Economics	3		3	Economics	3		3
Electrical Engineer- ing 1	3	4	5	Electrical Engineer- ing 2	3	4	5
Electrical Engineer- ing 3	3		3	Mathematics 26	3		3
				Mechanical Engineer- ing 2	4	2	5
Total	17			Total	17		

# SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 25	2	2	3	Chemistry 26	2		2
Chemistry 27		8	3	Chemistry 28		8	3
Chemistry 29	3	4	5	Chemistry 30	3	4	5
Electives:				Civil Engineering 6	1		1
Biology 29	3	4	5	Electives:			
Economics	3		3	Biology 30	3	4	5
				Economics	3		3
				Mechanical Engineer- ing 6		3	1
				English	3		3
Total	17			Total	17		

# CIVIL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineer- ing 14		4	2
				Modern Language	3		3
Total	18			Total	20		

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 13	2		2	Drawing 4		4	2
Drawing 3		4	2	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Modern Language	3		3
Mechanical Engineering 17		4	2	Surveying 2	2		2
Modern Language	3		3	Surveying 4		10	5
Surveying 1		10	5	Elective	3		3
Total			18	Total			19

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 1	1		1	Civil Engineering 10	2		2
Civil Engineering 9	1		1	Civil Engineering 12	2		2
Civil Engineering 11	1		1	Civil Engineering 14	1		1
Civil Engineering 13	2		2	Civil Engineering 16	3		3
Electrical Engineering 3	3		3	Mathematics 24	3		3
Physics 3	3		3	Mechanical Engineering 2	3	2	4
Physics 13		4	2	Physics 4	3		3
Surveying 5		6	3	Physics 14		4	2
Total			16	Total			20

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	5		5	Biology 28	3	4	5
Civil Engineering 7	3		3	Civil Engineering 4	5		5
Electrical Engineering 1	3	4	5	Civil Engineering 6	1		1
Physics 5	2	6	5	Electrical Engineering 2	3	4	5
				English Composition 6	3		3
Total			18	Total			19

## ELECTRICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineering 14		4	2
				Modern Language	3		3
Total			18	Total			20

# CONSPECTUS OF COURSES

45

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 13	2		2	Drawing 4		4	2
Drawing 3		4	2	Economics	3		3
Mathematics 7	1		1	Mathematics 8	1		1
Mathematics 11	3		3	Mathematics 12	3		3
Mechanical Engineering 17	4		2	Mechanical Engineering 18	4		2
Modern Language	3		3	Modern Language	3		3
Physics 3	3		3	Physics 4	3		3
Physics 13		4	2	Physics 14		4	2
Total			18	Total			19

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineering 1	3	4	5	Electrical Engineering 2	3	4	5
Electrical Engineering 3	3		3	Mechanical Engineer- ing 2	3	2	4
Physics 5	2	6	5	Physics 6	2	6	5
Elective	2		2	Elective	2		2
Total			19	Total			19

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	3		3	Civil Engineering 6	1		1
Civil Engineering 7	3		3	Civil Engineering 16	3		3
Electrical Engineering 5	3		3	Electrical Engineering 6	3		3
Electrical Engineering 7	3		3	Electrical Engineering 10	3		3
Electrical Engineering 9	3	2	4	Electrical Engineering 12	3		3
Elective	2		2	Electives:			
				English Composition 6	3		3
				Mathematics 26	3		3
				Surveying 6	6		3
Total			18	Total			16

## MECHANICAL ENGINEERING

### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English Composition 1	3		3	English Composition 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineering 15		4	2
				Modern Language	3		3
Total			18	Total			20

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 13	2		2	Drawing 4		4	2
Drawing 3		4	2	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineering 18		4	2
Mechanical Engineering 17	4	2		Modern Language	3		3
Modern Language	3		3	Physics 4	3		3
Physics 3	3		3	Physics 14		4	2
Physics 13		4	2	Elective			3
Total			18	Total			19

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineering 1	3	4	5	Electrical Engineering 2	3	4	5
Mechanical Engineer- ing 7		4	2	Mechanical Engineer- ing 2	3	2	4
Mechanical Engineer- ing 11	2		2	Physics 6	2	6	5
Physics 5	2	6	5	Elective			2
Total			18	Total			19

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	3		3	Civil Engineering 6	1		1
Civil Engineering 7	3		3	Electrical Engineering 10	3		3
Electrical Engineering 7	3		3	Electrical Engineering 12	3		3
Mechanical Engineer- ing 3	2	4	4	Mechanical Engineer- ing 6	2	4	4
Mechanical Engineer- ing 5	2	2	3	Mechanical Engineer- ing 8	2	4	4
Mechanical Engineer- ing 9		4	2	Electives:			
Total			18	Mathematics 26	3		3
				Surveying 6		6	3
				Total			18

## HOME ECONOMICS

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 7	3	4	5	Chemistry 8	3	4	5
English Composition 1	3		3	English Composition 2	3		3
Foreign Language	3		3	Foreign Language	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 6	2		2
Home Economics 1		2	1	Home Economics 2		2	1
Physical Education		2		Physical Education		2	
Total			17	Total			16

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 13	3	4	5	Biology 14	3	4	5
Chemistry 23			3	Chemistry 24			3
English Literature 1	3		3	Foreign Language	3		3
Foreign Language	3		3	Home Economics 4		2	1
Home Economics 3	1		1	Home Economics 12	1		1
Home Economics 7	3		3	Home Economics 14	1	4	3
Physical Education		2		Physical Education		2	
Total			18	Total			16

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
History 1	3		3	History 2	3		3
Home Economics 5		2	1	Home Economics 6		2	1
Home Economics 13			2	Home Economics 8	1	4	3
Home Economics 15			3	Home Economics 16	3	2	4
Home Economics 23	3		3	Home Economics 24	3		3
Physics 1, 11	2	2	3	Physics 2, 12	2	2	3
Physical Education		2		Physical Education		2	
Elective from A. B. Course							
Total			16	Total			17

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 21	3	4	5	Home Economics 10	1	4	3
Home Economics 9	1	4	3	Home Economics 22	4		4
Home Economics 17	3	2	4	Home Economics 18 or	1	2	2
Electives from the Junior and Senior A. B. Course.				Home Economics 20			3
No student may take less than sixteen hours, nor more than nineteen hours.				Electives from the Junior and Senior A. B. Course.			
				No student may take less than sixteen hours, nor more than nineteen hours.			
Total			16	Total			16

Education 1, 2, and 6 are suggested for those preparing to teach.

## REQUIREMENTS FOR ADVANCED DEGREES

The degrees of Master of Arts and Master of Science will be conferred upon Bachelors of Arts or of Science who shall have completed with a grade not lower than "B" thirty semester hours of resident work of an advanced nature, of which a major of at least eighteen hours must be in one Department. All courses must have the approval of the head of the Department in which the major is chosen and of the



Committee on Advanced Degrees. No credit will be given for work done in another institution, which has already been counted toward a degree.

Graduates of Bucknell University, who at the end of their Senior year have completed one-half of the work required for the Master's degree, may be admitted to the Master's degree one year after receiving the first degree, if the remainder of the work is completed.

Graduates of Bucknell University, who attained an average grade of 85% in all undergraduate work, may do a part of the work *in absentia*, but will not be given the degree in less than three years after receiving the first degree.

All non-resident graduate students must enroll with the Registrar before November 1st of the College year.

In the Master of Science diplomas, the special field in which the work is done will be designated when recommended by the head of the Department in which the major is chosen.

The degrees of Civil Engineer, Electrical Engineer, Mechanical Engineer, and Chemical Engineer will be conferred only upon persons who have proved their ability to plan and direct professional work or original work in applied science. The candidate must have received a Bachelor's degree from Bucknell University at least five years before registration for the advanced degree, and must have practiced his profession successfully for a similar period, during at least one year of which he must have had responsible charge of work as principal or assistant. When a candidate registers, he must present a detailed account of his professional experience, which must be approved by the Committee on Advanced-Degrees in consultation with the Professor in charge of the Department in which he registers. Candidates must also present a satisfactory thesis or an approved equivalent of the same, which shall give evidence of their fitness to receive the degree sought. This thesis may not be a mere description of engineering work of a usual character, nor a

digest of existing literature, but shall describe or contain some distinct contribution to the engineering profession.

Membership of an approved grade in the principal engineering or technical societies may be considered sufficient evidence of a candidate's fitness to receive an engineering degree.

# COURSES OF INSTRUCTION

The term hour, unless otherwise specified, signifies credit hour. The odd numbers indicate first semester courses.

## BIBLE

1. Hebrew History and Literature. Juniors and Seniors. First semester. Three hours. Professor Phillips.

2. New Testament History and Literature. Juniors and Seniors. Second semester. Three hours. Professor Phillips.

4. The Gospels. Juniors and Seniors. Second semester. Three hours. Professor Phillips.

New Testament Greek. (Greek 7-8). Professor Hamblin.

## BIOLOGY

Professors Davis and Stewart, Assistant Professor Rice, Mrs. Davis, and Mr. Miller

1. Zoology. Lectures, text-books, and laboratory work. The fundamental principles of Biology are presented and illustrated by direct and comparative study of the lower forms of life, beginning with the Protozoa. Attention is paid to the structure, development, relationships, behavior, and economic value of a wide series of organisms. Sophomores. First semester. Five hours.

2. Zoology. The second semester continues the comparative study of animals by dissection of the higher forms, including mammals. Sophomores. Second semester. Five hours.

Prerequisite: Course 1.

**3. Ornithology.** A study of living birds in the field. The student learns the terms used in describing birds by the use of text-books, bird skins and mounted specimens. The course includes: "Finding and Naming Birds", "The Distribution of Birds", "Migration of Birds", "The Voice of Birds", "The Nesting of Birds", "The Plumage of Birds", "The Food of Birds", and "The General Activities of Birds". The student is taught how to make bird skins. Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2.

**4. Ornithology.** The course continues the work of the first semester. Juniors. Second semester. Two hours.

**6. Entomology.** Recitations and laboratory work. In this course each student makes a thorough study of the dissection, life history, and habits of insects representative of the different orders. Special attention is given to the economical importance and relation of insects to agriculture. Juniors. Second semester. Two hours.

Prerequisite: Course 1.

**7. Microscopic Anatomy.** Lectures, text-books, and laboratory work. The first semester's work covers the embryology of representative forms as the chick and pig. The methods employed in the laboratory give the student much practice in fixing, dehydrating, embedding, and sectioning tissues. Juniors. First semester. Five hours.

Prerequisite: One year of Zoology and Descriptive Chemistry.

**8. Microscopic Anatomy.** The second semester covers the histology of the human body and is illustrated by the preparation of a large series of microscopic slides by each student. Juniors. Second semester. Five hours.

Prerequisite: Course 7.

**9. Osteology.** Lectures covering the development of the skeletal system. Laboratory work on the human skeleton articulated and disarticulated; the gross structure of bones; the preparation and comparative study of skeletons of other vertebrates. Seniors. First semester. Three hours.

Prerequisite: One year of Zoology.

**10. Human Anatomy.** Dissection and quizzes on the parts dissected. Each student is assigned to the dissection of one quarter of the human cadaver. This course is designed to instruct the student in the general method of dissection in the relation of the structures in the body, and to present a general idea of regional anatomy. Models and text-books are used as guides. Juniors. Second semester. Three hours.

Prerequisite: One year of Zoology.

**12. Human Anatomy.** A course similar to the preceding. The student is assigned to the part of the cadaver which he has not previously dissected. This course in Human Anatomy, following the preceding one, affords the student an opportunity to make a dissection of the entire human body. Seniors. Second semester. Three hours.

Prerequisite: Course 10.

**14. Human Physiology.** The aim of this course is to acquaint the student with the general principles of Physiology, including a brief survey of the structure of the human body, motion, the central nervous system, organs of special sense, respiration, circulation, digestion, secretion, and excretion.

The work consists of lectures, demonstrations, and a personal study by the student of a designated text-book in Physiology. Each student spends four hours a week in the laboratory performing practical experiments in Physiology. Sophomores. Second semester. Five hours.

**15. Human Physiology, Advanced.** A more detailed study of the action of motor and nerve tissue is made in this course than in the preceding one. Likewise more advanced work is presented on blood and circulation, external and internal respiration, regulation of body heat, chemical coordination, digestion and absorption.

The course consists of lectures and demonstrations. Each student spends four hours a week in the laboratory and has the use of all essential apparatus needed to experiment with freshly prepared material. Considerable time is spent on the physiological chemistry of blood, milk, foods and urine. Juniors. First semester. Five hours.

Prerequisite: One year of college Zoology, Chemistry, Physics, and Course 14.

**13. Biology, Domestic Science.** This course is designed to present the fundamental properties of living matter. The structure, form, and life habits of one-celled and multi-cellular plants and animals are studied. The inter-relation of the animal and plant kingdoms is presented. Simple problems in evolution and heredity are discussed.

The work consists of lectures, quizzes, and a personal study by the student of a designated text in Biology. Four hours a week are devoted to laboratory exercises on living and preserved material. Each student has the use of a compound microscope, and is instructed in its care and use. Sophomores. First semester. Five hours.

**17 and 18. Scientific German or French.** The reading of foreign Biological Literature. Sophomores. First and second semesters. Two hours.

Prerequisite: German six hours or French six hours.

**19. Bacteriology.** By the method of recitations, lectures, and laboratory work, the student is given the fundamentals in micro-biology. The laboratory work includes the making of culture media, methods of sterilization, isolation of bacteria in pure cultures, staining of films, the examination of bacteria, and the measuring of micro-organisms under the microscope; a study of bacteria in milk, drinking water, and sewage. Seniors. First semester. Five hours.

Prerequisite: Zoology or Biology, and six hours of Chemistry.

**21. Bacteriology, Domestic Science.** This course is similar to the preceding one. Stress is placed upon the relation of bacteria, yeasts, and molds to the preparation and preservation of foods. The bacteriological problems of personal and public hygiene and sanitation are included. Seniors. First semester. Five hours.

Prerequisite: Zoology or Biology, and the first course in Chemistry.

**22. Bacteriology, Advanced.** This course is designed to be a continuation of either of the preceding courses in Bacteriology. The characteristics of the various groups of pathogenic bacteria are presented in lectures and readings from standard text-books on Bacteriology and monographs. The laboratory work includes the cultural characteristics of the various pathogenic groups, quantitative and qualitative bacteriological analysis of milk and water, culturing of naso-pharyngeal swabs, and some of the more simple serological reactions, such as agglutination, precipitation, etc. Seniors. Second semester. Five hours.

Prerequisite: Courses 19 and 24.

**24. Sanitary Science.** A lecture course setting forth the relation of proper sanitation to disease, the history of epidemics, the nature and value of vaccination, and other factors controlling infection and resistance. Juniors. Second semester. Two hours.

**25. Botany.** Recitations, lectures and field work. This is a general course including the anatomy of the representative types and their relation to the environment; a study is made of the local flora. The laboratory work and lectures develop the subject from the evolutionary standpoint. Sophomores. First semester. Five hours.



**26. Botany.** This course continues the work of the first semester. Field work to show the winter conditions of trees and shrubs. Systematic Botany. Use of manuals such as Gray's and Britton's and Brown's. Sophomores. Second semester. Five hours.

Prerequisite: Course 25.

**27. Genetics.** The lectures and reports deal with the facts and problems of variation and heredity, especially their application to mankind. Text-books by such authors as Walter, Castle, and Conklin. Seniors. First semester. Three hours.

**28. Forestry.** This course covers the factors that control and regulate the development of forests. In the laboratory and the field work the students are taught to identify the trees. Seniors. Second semester. Five hours.

**29. Geology and Mineralogy.** Recitations, lectures, and laboratory work. A general course intended to give the leading facts and principles of Geology and the more important events in the geological history of the earth. The development of the North American continent is studied in detail. The laboratory work includes determinative Mineralogy. Seniors. First semester. Five hours.

**30. Economic Geology.** Recitations, lectures and laboratory work. An economic study of the rocks and minerals of economic importance including metals and non-metals. Seniors. Second semester. Five hours.

Prerequisite: Geology.

**31. Physiological Psychology.** Recitations, lectures and laboratory work. The aim is to study the development of the physiological bases of the mind. Juniors. First semester. Three hours.

**32. Comparative Psychology.** Recitations, lectures and reports. The germinal bases of the mind. In the development of the mind comparisons are made between human development and that of other animals. The oneness of life in respect to its fundamental processes is studied by such comparisons. Seniors. Second semester. Three hours.

## CHEMISTRY AND CHEMICAL ENGINEERING

Professors Owens and Brown, Associate Professor Groner, Assistant Professor Schuyler, and Mrs. Brown

**1 and 2. General Inorganic Chemistry and Qualitative Analysis.** This is a fundamental course required of all Engineering

students except those in Chemical Engineering. The course covers the laws of chemistry, a study of the methods of preparation, properties and uses of the most important elements and their compounds. The application of chemistry to the arts and manufactures is an important feature of the course. About one-third of the time is devoted to qualitative analysis. The work is conducted by text-book, lectures, recitations and laboratory work. First and second semesters. Ten hours.

**3 and 4.** This course is similar to 1 and 2 but modified to meet the needs of Chemical Engineering students. Additional work is required in this course. First and second semesters. Ten hours.

**5 and 6.** This course is similar to 1 and 2 but adjusted to meet the needs of students in Biology and those who intend to study medicine. First and second semesters. Ten hours.

**7 and 8.** This course is similar to 1 and 2 but adjusted to meet the needs of students in Home Economics. First and second semesters. Ten hours.

**9 and 10.** This is a briefer course in general inorganic chemistry. The work is suited to the needs of such students as desire a knowledge of chemistry for informational and cultural value. This course will not be considered as a prerequisite to any of the more advanced courses. Students who present high-school chemistry as an entrance credit will be allowed to register for the course.

First and second semesters. Six hours.

**12** This course is a continuation of 5 and 6 and is given to meet the entrance requirements in general inorganic chemistry of certain medical colleges. Juniors. Second semester. Four hours.

**13. Metallurgy.** The sources, manufacture, properties and uses of the different metals, with the influence which various impurities exert, are studied. Special attention is given to iron and steel, also the various special alloys which are being placed upon the market. Text, lecture and laboratory. Sophomores and Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2 or the equivalent.

**14. Agricultural Chemistry.** This is a course in the study of the relation of chemistry to agriculture. The course covers the essentials of plant and animal chemistry. A study is made of the composition of soils and fertilizers. The general principles of agriculture are given consideration.

This course covers the legal requirements for teachers in the high schools of Pennsylvania. Second semester. Three hours.

Prerequisite: Courses 1 and 2 or the equivalent.

**15 Quantitative Analysis.** This is a course in elementary quantitative analysis covering both volumetric and gravimetric methods. The course meets the needs of students who intend to study medicine, and others who desire a knowledge of elementary quantitative analysis. First semester. Five hours.

Prerequisite: Courses 5 and 6 or the equivalent.

**17 and 18. Quantitative Analysis.** Lecture, recitation and laboratory work. This course aims to teach the student the fundamentals of analytical procedure and manipulation. Gravimetric and volumetric determinations are first made with pure chemicals. This is followed by the analysis of limestone, ores, alloys, oils, gas, water, etc. The latter part of the second semester is given to special methods in technical analysis and the determination of traces of impurities in the so-called "chemically pure" reagents. Required of Chemical Engineers and elective for others who may be able to qualify for the work. Sophomores. First and second semesters. Ten hours.

Prerequisite: Courses 3 and 4 or the equivalent.

**19 and 20. Organic Chemistry.** This course is an introduction to the study of the carbon compounds. The work is given with emphasis on the relation of organic chemistry to industrial chemistry. The course is intended for Chemical Engineering students and others who may be able to qualify for the work. First and second semesters. Ten hours.

Prerequisite: Courses 3 and 4 or the equivalent.

**21 and 22.** This course is similar to 19 and 20 but adjusted to meet the needs of Biology students and those who intend to study medicine. First and second semesters. Eight hours.

Prerequisite: Courses 5 and 6 or the equivalent.

**23.** This is a brief course in the chemistry of carbon compounds. The work is arranged to meet the needs of Home Economics students. First semester. Three hours.

Prerequisite: Courses 7 and 8 or the equivalent.

**24. Food Chemistry.** This is an elementary course in the study of the chemistry of foods. Second semester. Three hours.

Prerequisite: Course 23.

**25 and 26. Industrial Chemistry.** A series of lectures and recitations upon the most important technical chemical operations exclusive of metallurgy. It is essentially a study of the application of chemical principles to technical processes and the mechanical methods of applying these processes, supplemented, so far as possible, by visits to plants in operation. The course includes a study of such industries as the manufacture of sulphuric acid, alkalies, glass, cement, rubber, paper, dyestuff, etc. Seniors. First and second semesters. Four hours.

Prerequisite: Courses 13, 19, 20.

**27 and 28. Chemical Preparations.** Primarily a laboratory course, the experiments duplicating, so far as possible, the operations used in industrial works. Underlying principles and percentage yield are required in the written report of each experiment. About thirty-five preparations are required. Inorganic substances are first prepared and purified. Approximately one-third of the work consists of the electrolytic preparation of inorganic and organic compounds. Seniors. First and second semesters. Six hours.

Prerequisite: Courses 13, 19, 20, 33, 34, Physics 2, 3.

**29 and 30. Physical Chemistry.** Class and laboratory work. Class work consists of lectures, recitations and problems. This course is fundamental in character and is intended to develop the idea of physical chemistry as applied to actual problems in industrial operations. A study is made of the kinetic theory of gases, gas laws, vapor pressure, equilibria, phase rule, theories of solution, osmotic pressure, etc. The latter part of the year is given to the study of electrochemistry and chemical statics and dynamics. Laboratory work is one experiment per week. Written reports and discussions required for each experiment. The laboratory work includes the determination

of density of gases, viscosity, optical activity, refraction, partition coefficients, molecular weights by various methods, reaction velocity, transport numbers, electromotive force, conductivity, etc. Students use the calorimeter, colorimeter, refractometer, polarimeter, tintimeter, viscosimeter, etc. and are made to recognize their application to industrial problems. Seniors. First and second semesters. Ten hours.

Prerequisite: Courses 17, 18, 19, 20, 33, 34; Mathematics through Integral Calculus; All Engineering Physics to the end of the Junior the Junior year.

**32. Physical Chemistry.** This is an elementary course in physical chemistry. The work is suited to the needs of Biology students and those who intend to study medicine. The course meets the entrance requirements of all medical colleges. Second semester. Four hours.

Prerequisite: Courses 21, 22 or the equivalent.

**33 and 34. German Chemistry.** A course in which a study is made of selections from standard German periodicals. The work in this course is usually a study of the Chemiker Kalendar for the current year. Juniors. First and second semesters. One hour.

Prerequisite: Courses 3, 4, 17, 18, German: 6 hours.

**35 and 36. Special courses.** These courses are given at the option of the professor in whose department such work would fall. They are laboratory courses open to Seniors. Credit to be arranged.

NOTE:—Students who intend to teach Chemistry should elect the following courses: 1 and 2 (or 3 and 4), 15 (or 17 and 18), 19 and 20, 25 and 26, 29 and 30.

## CIVIL ENGINEERING

Professor Lindemann

**1. Architectural Design.** A course in which are considered the elementary principles of building construction. Juniors. First semester. One hour.

**3 and 4. Bridges and Buildings.** The work of this course includes the solution of problems in graphic statics; the determination of stresses and deformations in framed structures by graphic and algebraic methods; the calculation and design of roof and bridge trusses, also the detailing and drafting of the same. Seniors. First and second semesters. Ten hours.

**6. Contracts.** A course in which are considered the principles of Common Law as applied to contracts. Seniors. Second semester. One hour.



**7. Hydraulics.** The work of this course includes the theory of Hydrostatics and Hydraulics; the flow of water over weirs, through orifices and tubes, and in pipes, canals and rivers; the measurement of water-power; the theory of water-wheels and turbines. Seniors. First semester. Three hours.

**9 and 10. Masonry and Foundations.** The work of this course includes a consideration of the materials of masonry construction, their preparation and use; a study of foundations—ordinary, pile and under-water; the investigation and design of masonry dams, retaining walls, abutments, piers, chimneys, culverts and arches. Juniors. First semester. One hour. Second semester. Two hours.

**11 and 12. Roads and Pavements.** The work of this course includes a study of the economic location, design, and construction of roads and pavements; a comparison of the materials and methods of construction; the design of some road or pavement, including the preparation of drawings, specifications and estimates for the same. Juniors. First semester. One hour. Second semester. Two hours.

**13 and 14. Strength of Materials.** The work of this course includes a study of simple and combined stresses, and the resulting deformations; a consideration of the methods employed in testing the materials of construction; the solution of numerous problems in the design and investigation of beams, columns, shafts, pipes and footings. Reinforced concrete receives special attention. Juniors. First semester. Two hours. Second semester. One hour.

**16. Water Supply and Sanitary Engineering.** The work of this course includes the consideration of collection and storage of water, quantity of water required, rainfall, flow of streams, evaporation, supplying capacity of water-sheds, springs and wells; a study of the various methods of sewage disposal; the design of a water supply system and of a sewage disposal plant. Juniors. Second semester. Three hours.

Surveying, see Surveying.

## ECONOMICS AND POLITICAL SCIENCE

Professor Heim

Assistant Professor Howes

**1. Introduction to the State and Society.** The development of political institutions and of political and social theories. Sophomores. First semester. Two hours.



2. **Economic History.** The development of Economic Institutions, with special emphasis upon the development of the economic life of Europe. Sophomores. Second semester. Two hours.

3. **Economics.** A general course covering the field, but placing emphasis upon organization, value, production and consumption. Sophomores. First semester. Three hours.

4. **Economics.** Current economic problems, with special reference to theories of distribution. Continuation of 3. Sophomores. Second semester. Three hours.

5. **Business Organization.** Problems of organization and administration of business units, and their interrelation. Juniors and Seniors. First semester. Three hours.

6. **Business Finance.** The financial organization of business units. Methods of raising funds and their management. Types of investment securities. Juniors and Seniors. Second semester. Two hours.

7. **Principles of Accounting.** Theory of balance sheet accounts. Problems of technique. Classification and interpretation of accounts. Preparation of financial statements. Juniors and Seniors. First semester. Three hours.

8. **Principles of Accounting.** A continuation of course 7. Problems of partnership and corporation accounts. Labor saving devices. Valuation of assets. Juniors and Seniors. Second semester. Two hours.

Prerequisite: Course 7.

9. **Money and Banking.** Juniors and Seniors. First semester. Two hours.

10. **Public Finance.** Public revenue and expenditures. Preparation of budgets. Public taxation. Public Borrowing. Juniors and Seniors. Second semester. Three hours.

11. **Markets and Marketing.** Analysis of markets. Methods and organization of markets, and methods of financing. In alternate years. Juniors and Seniors. First semester. Two hours.

12. **International Trade.** Foreign exchange. Commercial policies. Promotion of foreign trade and shipping. Methods of exporting. In alternate years. Juniors and Seniors. Second semester. Two hours.

13. **Railroad Transportation.** In alternate years. Juniors and Seniors. First semester. Two hours.

**14. Principles of Insurance.** A course in the principles of insurance with especial attention to life insurance and certain forms of social insurance. The following are matters of consideration: the theory of life insurance, mortality tables, selection of lives, company organizations, policies, wage earner's insurance, the state and insurance. In alternate years. Juniors and Seniors. Second semester. Two hours.

**15. Business Law I.** The place of law in business operations and a somewhat detailed study of the fundamental principles of the law of persons and of contracts. Juniors and Seniors. First semester. Two hours.

**16. Business Law II.** A continuation of course 15. The law as applied to agency, sales, suretyship, mortgages, pledges, negotiable instruments, partnership, corporations. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Course 15.

**17. National Government.** A descriptive course in the main features of the central government of the United States. Sophomores. First semester. Three hours.

**18. State Government.** This course is a continuation of course 17 and deals with state and county government in the United States. Should be taken in connection with course 17 but does not need to be preceded by it. Sophomores. Second semester. Two hours.

**19. Comparative Government I.** A study of the principles and operation of parliamentary government in England as it exists today, with some attention to the governments of Canada, Australia, and South Africa. Juniors and Seniors. First semester. Two hours.

**20. Comparative Government II.** This course is a continuation of course 19 and deals with the governments of France, Italy, Germany, Switzerland, and Russia. Juniors and Seniors. Second semester. Two hours.

**21. The Police Power.** Standards of legislation. The relation of public policy to social and economic questions. Juniors and Seniors. First semester. Two hours.

**22. Municipal Government.** A study of the various forms of city government in the United States. Municipal problems and reforms. Juniors and Seniors. Second semester. Two hours.

**23. American Law I.** This is a course in the elements of law. The first semester deals largely with the following topics: (1) the nature and sources of the law, (2) the law of torts, and (3) the law of crimes. Juniors and Seniors. First semester. Three hours.

**24. American Law II.** This course is a continuation of course 23. The principal subjects of discussion are (1) the law of contracts, (2) partnership and corporations, (3) the law of principal and agent, (4) master and servant; employer and employee, (5) the law of persons and domestic relations, (6) public law: constitutional, administrative, and international law, (7) courts, remedies, and procedure. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Course 23.

**25. International Law I.** The nature, history and subjects of international relations. During the first semester attention is given to the nature and sources of international law, states and their essential attributes, and inter-course of states in time of peace. Alternates with course 27. Juniors and Seniors. First semester. Two hours.

**26. International Law II.** This course continues course 25. The principal subjects for analysis are: the laws of war and the relations of belligerents, and the law and practice of neutrality. Alternates with course 28. Juniors and Seniors. Second semester. Two hours.

Prerequisite: Course 25.

**27. American Diplomacy I.** A study of the foreign relations of the United States: the distinctive feature of our foreign policy and our contribution to the law of nations. During the first semester are considered the following: (1) neutrality, (2) fisheries questions, (3) commercial restrictions, (4) the Monroe Doctrine, (5) freedom of the seas. Alternates with course 25. Juniors and Seniors. First semester. Two hours.

**28. American Diplomacy II.** This course is a continuation of course 27 but does not need to be preceded by it. The following topics are matters of discussion: (1) expatriation, (2) arbitration, (3) expansion of the United States, (4) the League of Nations. Alternates with course 26. Juniors and Seniors. Second semester. Two hours.

**29. Constitutional Law I.** An advanced course in the principles of governmental powers and limitations in the United States. For those who have had some preparation in government and law. Some of the topics discussed are: the law in the courts, political rights under the constitution, personal and religious liberty, laws impairing the obligation of contracts. Open to those who have had courses 15 and 16, or 17 and 18, or 23 and 24. First semester. Three hours.

**30. Constitutional Law II.** This course is a continuation of course 29. Cases will be read and discussed dealing with the regulation of interstate and foreign commerce, interstate privileges and immunities, due process of law as applied to taxation, procedure, police power,

eminent domain, and the various other federal powers. A careful study is made of the jurisdiction of the federal courts. Second semester. Three hours.

Prerequisite: Course 29.

## EDUCATION

Professor Phillips

**1. History and Principles of Education.** An introductory course. A genetic approach to the problems of modern education. Juniors and Seniors. First semester. Three hours.

**2. Psychology of Education.** Based on Cameron's *Psychology and the School*. Juniors and Seniors. Second semester. Three hours.

**4. Philosophy of Education.** Based on Dewey's *Democracy and Education*. Juniors and Seniors. Second semester. Three hours.

**5. Educational Theories.** An introductory course to the philosophy of education. Juniors and Seniors. First semester. Two hours.

**6. Secondary Education.** A study of the methods and technique of teaching in high schools. Seniors. Second semester. Three hours.

**Comparative Psychology.** (Biology 32). Professor Davis.

**Child Study.** (Home Economics 24). Professor Carey.

**Teachers' Course in English.** (English Literature 13). Professor Herold.

**Teachers' Course in Mathematics.** (Mathematics 22). Associate Professor Everett.

## RELIGIOUS EDUCATION

**7. Religious Education.** Based on Coe's *A Social Theory of Religious Education*.

**Bible** 1, 2, 4. Professor Phillips.

**Greek** 7, 8. Professor Hamblin.

**Fundamentals.** President Hunt.

## ELECTRICAL ENGINEERING

Professor Rhodes and Mr. Irland

1. **Direct Current Machinery.** This course begins with a brief review of electromagnetism, followed by a careful study of the electric circuit involving the principles of the simpler alternating current circuits. Numerous problems are given to clearly illustrate the laws of these circuits. Attention is given to the various types of electrical measuring instruments, and their calibration, measurements of inductance, capacity and resistance. Then follows a careful study of the principles of dynamo electric machines as to their structural details, performance characteristics, and problems in operation. The work of the course is accomplished through lectures, recitations, laboratory experiments and writing of reports. Juniors. First semester. Five hours.

This course must be preceded or accompanied by Physics 5.

2. **Alternating Current Machinery.** The study of applied circuits is enlarged upon in this course and extended to include generators, transformers, induction motors, synchronous motors, synchronous converters, and motor generators. The same plan is followed as that in the development of the preceding course, and the laboratory work is primarily designed to illustrate the theory of the course, but wherever practicable, commercial tests in operation are performed. Juniors. Second semester. Five hours.

Prerequisite: Course 1.

3. **Theoretical Mechanics.** A rapid review of the type forms of differential equations most frequently met in this work is taken up first. Then follows the study of forces, couples, moment of inertia, and flexible cords, together with the geometry of motion, dynamics of machinery, work, energy, and impact. Juniors. First semester. Three hours.

Prerequisite: One year of Calculus.

5 and 6. **Electrical Design.** Numerous problems on the magnetic circuit are taken up and followed with the design and working drawing of an electromagnet. Then follows the discussion of the principles of design as applied to continuous and alternating apparatus. Each student is required to make complete computations



for a continuous current generator or motor, alternator, induction motor, and two transformers. All electrical and magnetic dimensions are computed and scale drawings of the important parts are made. Seniors. First and second semesters. Six hours.

Prerequisite: Courses 1 and 2.

**7. Generating Stations.** Comparative performance of the important prime movers and the economic management of generating plants and substation equipment are studied in detail and practical estimates made. Attention is also given to the application of storage batteries to the problems of distribution. The care of storage batteries, arrangement of switch gear, instruments, transformers, and lightning arresters are taken up in their relation to the generating station. Seniors. First semester. Three hours.

Prerequisite: Course 2 and Mechanical Engineering 2.

**9. Telegraphy and Telephony.** Attention is given in detail to the various systems of electric telephony and telegraphy in practical use, with reference to their principles and modes of application. The installation, maintenance and testing of telephone and telegraph lines are considered as well as the difficulties of their operation. Efficiency tests are made and graphs plotted. Seniors. First semester. Four hours.

Prerequisite: Courses 1 and 2, and Physics 5.

**10. Electric Transmission, Line Construction, Wiring, and Economics.** The various systems and arrangements for power distribution, wiring for lighting, and substation feeder systems, are investigated. Practical problems in the economics of transmission and distribution including line construction are computed, and complete typical systems are worked out in detail. Seniors. Second semester. Three hours.

Prerequisite: Course 2.

**11. Industrial Motor Control.** A study is made of the fundamental diagrams upon which most practical motor control circuits are based. Explanations are made of a large number of different types of hand controllers and automatic contactors and relays used in the control of electric motors of all types, both alternating and



direct current. The student is required to trace the circuits and explain the operation of a number of control wiring diagrams in practical use, thus becoming familiar with various control devices and their application. Special course for those who have already taken the course in Alternating Current Machinery. First semester. Two hours.

**12. Electric Railways, Construction, Operation, and Economics.** This course deals with the principles and design of the different types of railway construction. Analysis of train performance, types of control, systems of braking, and methods of motor suspension are studied in detail. Estimates of complete equipment for a short line are made and prospective revenue from operation considered. The economics of the operation and maintenance of American railways is considered in the conclusion of the course. Seniors. Second semester. Three hours.

Prerequisite: Course 2.

**13. Mechanical Telephone Exchanges.** Special Course. First semester. Three hours.

**14. Radio Circuits.** The first part of this course consists of the study of various types of radio apparatus and the circuits used in transmitting and receiving sets for wireless telegraphy. Particular attention is paid to the principles of operation of the various devices. The latter part of the course consists of the experimental determination of the characteristic curves of three electrode vacuum tubes of several types, and a study of the theory of operation of these tubes as used in radio circuits. The students are given an opportunity to visit and inspect the radio station of the university, which is well equipped with transmitting and receiving apparatus. Special course for those who have already taken the course in Alternating Current Machinery. Second semester. Two hours.

**15. Storage Batteries.** Special Course. First semester. Three hours.

**16. Oscillography.** This course deals with the construction, adjustment and operation of the oscillograph. Oscillograms of continuous and instantaneous fluctuations of current and voltage in various forms and arrangements of electrical circuits are taken and printed. A report is presented containing a description of the construction and operation of the apparatus together with an analysis of the oscillograms obtained. Special Course. Second semester. Three hours.

Prerequisite: Course 2.

## DRAWING

**1 and 2. Freshman Drawing.** The work covers the use of instruments: geometrical problems: form and proportion of standard letters: methods of spacing and laying out of titles: orthographic and isometric drawings: sectioning, shading, and developments. First and second semesters. Four hours.

Required of all candidates for the B.S. degree except those in Home Economics.

**3 and 4. Sophomore Drawing.** The work of the first year is continued by the use of special problems for each branch of engineering. The Electrical Engineering and Mechanical Engineering students will make detailed drawings of bolts, nuts, and machine parts and also assembly drawings of complete machines. The Civil Engineering students will make detailed drawings of such structures as sewers, tunnels, bridges, and will enlarge and reduce maps. First and second semesters. Four hours.

Required in Civil Engineering, Electrical Engineering, and Mechanical Engineering courses.

**5 and 6. Junior Drawing.** This course is required in the Electrical Engineering and Mechanical Engineering courses and covers the algebraic and graphical solution of problems in simple mechanisms such as levers, linkages, wheels in trains, pulleys, cams, gears and screws, and the mathematical design of cams and gear teeth. First and second semesters. Four hours.

## ENGLISH

Professors Herold, Rassweiler, and Rockwell, Associate Professor Groves, Mr. Warfel, and Mr. Beers.

Undergraduates who major in English are required to complete twelve semester hours in English Literature, three in Rhetoric, and three in Public Speaking, excluding the prescribed work of the Freshman and Sophomore years. Courses with starred numbers are given regularly, but will be omitted in 1923-1924.

### A. ENGLISH LITERATURE

Professors Herold, Groves, and Rockwell, and Mr. Warfel

**1. English Literature.** A survey course in English prose and poetry for Sophomores; continued as Rhetoric 4 in the second semester. Required of all candidates for the degrees of A.B. and B.S. in Biology. First semester. Three hours.

Prerequisite: Rhetoric 1 and 2.

3. Victorian Literature, 1830-1890. Carlyle, Ruskin, and Tennyson. Juniors and Seniors. First semester. Three hours.
4. Victorian Literature Continued. Arnold, the Brownings, Morris, and Swinburne. Juniors and Seniors. Second semester. Three hours.
- \*5. Eighteenth Century, 1700-1790. Swift, Pope, Addison, Dr. Johnson, Gray, and Burns. Juniors and Seniors. First semester. Three hours.
- \*6. Revolt and Romanticism, 1790-1830. Wordsworth, Coleridge, Scott, Byron, Shelley, Keats, and the essayists, Lamb and De Quincey. Juniors and Seniors. Second semester. Three hours.
- \*7. Pre-Shakespearean Drama. A course in the Mediaeval and Elizabethan Drama. Juniors and Seniors. First semester. Three hours.
8. Shakespeare. An intensive study of three plays and a cursory study of twenty. Juniors and Seniors. Second semester. Three hours.
- \*9. Dante and Milton. A study of the great epics: Dante's *Divine Comedy* in an English translation, and Milton's *Paradise Lost*. Juniors and Seniors. First semester. Three hours.
10. American Literature to 1900. A survey of American Literature and a course in American ideals. Juniors and Seniors. Second semester. Three hours.
11. Modern Drama. A study of the new dramatic literature of Europe and America; its varieties, technique, aims, and problems. Juniors and Seniors. First semester. Three hours.
- \*12. Prose Fiction. Studies in the development of the leading types of English prose fiction. Juniors and Seniors. Second semester. Three hours.
13. Teachers' English. A course in the aims and methods of secondary-school English. Approved Juniors and Seniors who are majoring or minoring in English. First semester. Three hours.
14. Recent Literature. The leading English and American non-dramatic authors and movements of the last thirty years will be considered. Juniors and Seniors. Second semester. Three hours.
- \*15. Anglo-Saxon. A course in the forms and literature of Old English. Alternating with the course in Chaucer. Juniors and Seniors. First semester. Three hours.

**17. Chaucer and his Contemporaries.** A study of English life, language, and literature in the fourteenth century. Juniors and Seniors. First semester. Three hours.

## B. RHETORIC AND COMPOSITION

Associate Professor Groves, Professors Rockwell and Herold,  
Mr. Warfel, and Mr. Beers

Advanced courses in Argumentation and Debating are catalogued under Public Speaking.

**1. Freshman Rhetoric.** Themes, lectures, conferences, a study of prose specimens, and collateral reading. Required of all students in the first year. First semester. Three hours.

**2. Continuation of Course 1.** Required. Second semester. Three hours.

**4. Composition and Literature.** Required of all candidates for the degree of Bachelor of Arts. Second semester. Three hours.  
Prerequisite: Rhetoric 1 and 2.

**6. Business English.** An advanced course for Seniors in Engineering and Science. Second semester. Three hours.  
Prerequisite: Rhetoric 1 and 2.

**7. News Writing.** A preliminary study of the organization of the daily press, with practice in the common types of newswriting, followed by an examination of the function of the press as a distributor of news and a study of news values. Open to Sophomores, Juniors, and Seniors, by permission of the instructor, but intended primarily for Sophomores. First semester. Two hours.

**8. Journalism: Editorial problems.** A study of the American periodical as an organ of opinion, with practice in the writing of editorials. Open to Sophomores, Juniors, and Seniors, by permission of the instructor. Second semester. Two hours.

**9. Diction and Usage.** In the early part of the term a study of the development and present usage of the English Language; in the latter part an intensive study of the diction of the chief English prose stylists, especially the essayists, and the writing of original essays of all types. Juniors and Seniors. First semester. Three hours.

**10. Short Story Writing.** Studies in the structure of the shorter forms of prose fiction, based upon models, with practice in writing the short story. Open to Juniors and Seniors, by permission. Second semester. Three hours.

Note: In connection with Rhetoric 8, the editor-in-chief of the Bucknellian and of The Mirror may each receive an additional credit of three hours if approved by the English department.

### C. PUBLIC SPEAKING

Professor Rassweiler and Mr. Beers

**1. Story Telling.** This subject is treated primarily, not as an elocutionary art, but as an introduction to the art of public address. First or second semester. Two hours.

**3. Interpretation.** The art of discerning, sympathetic, and melodious reading. Sophomores. First or second semester. Two hours.

**5. Effective Speaking.** Special attention is given to those principles of oral rhetoric which distinguish effective oral expression from the written form, the construction of speeches with a definite end in view adapted to a particular occasion, the development of a fluent oral vocabulary, and the public speaker's habit of mind. Sophomores. First or second semester. Two hours.

**7. Debating.** Both theory and practice. Freshmen. First or second semester. Two hours.

**9 and 10. The Elements of Expression.** A course for those desiring to do advanced work or who want work in elocution. Problems of teaching are also discussed. Sophomores, Juniors, and Seniors. First and second semesters. Two hours.

Required for the assistants in the department and elective for others.

**11. Advanced Argumentation and Debate.** This course is conducted to meet the demands of those who desire work in written argumentation or in oral debate. It should be elected by all those who desire to enter intercollegiate debates or the Junior debate. Juniors and Seniors. First semester. Three hours.

Prerequisite: Course 7 or 8.

**12. Oratory.** Special attention is given to vigor and climax, and to the study of masterpieces. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Course 6.



**13. Advanced Interpretation.** Special attention is given to emotional reaction and rendition. Alternating with Course 15. Juniors and Seniors. First semester. Three hours.

Prerequisite: Courses 3, 9, 10.

**15. Dramatic Interpretation and Amateur Dramatics.** Dramatic expression, action, and problems in amateur stage craft. Alternating with Course 13. Juniors and Seniors. First semester. Three hours.

Prerequisite: Courses 3, 9, 10.

## FUNDAMENTALS

President Hunt

1. The President meets the Freshmen, in four sections, one hour a week the first semester in a study of fundamental truth and the problems of student life. One hour.

The text-book for study is Fisher's small *Manual of Christian Evidences*.

## GERMAN

Professor Rockwell

**1. Elementary German.** Drill on pronunciation. Elements of grammar. Reading of easy prose. First semester. Three hours.

**2. Elementary German.** Reading of easy prose, free reproduction, vocabulary drill, dictation. Second semester. Three hours.

**3. Intermediate German.** Reading of prose. Practice in speaking and writing German. Vocabulary drill. Dictation. First semester. Three hours.

Prerequisite: Course 2 or its equivalent.

**4. Nineteenth Century Novel.** Rapid reading of leading novelists. Practice in speaking and writing German. Second semester. Three hours.

Prerequisite: Course 3.

**5. Schiller.** Reading of leading dramas. Discussion of life and work of Schiller. First semester. Three hours.

Prerequisite: Course 4.

**6. Lessing.** Reading of leading dramas, discussion of life and significance of Lessing. Second semester. Three hours.

Prerequisite: Course 5.

**7. Goethe.** Reading of principal dramas. Discussion of life and work of Goethe. First semester. Three hours.

Prerequisite: Course 6.



8. Goethe. Reading of Goethe's prose, discussion of his significance. Second semester. Three hours.

Prerequisite: Course 7.

9. Nineteenth Century Drama. Kleist and Grillparzer. Reading of principal dramas, discussion of their life and work. First semester. Three hours.

Prerequisite: Course 8.

10. Nineteenth Century Drama. Hebbel and Ludwig. Reading of principal dramas, discussion of their life and work. Second semester. Three hours.

Prerequisite: Course 9.

11. The German Lyric. Goethe, Schiller, Heine, Uhland, and minor poets. First semester. Three hours.

Prerequisite: Course 8.

12. The Last Generation in German Literature. A brief survey of modern developments in German and Austrian literary life. Second semester. Two hours.

Prerequisite: Course 11.

14. Teachers' Course. A brief survey of the materials and methods of the teaching of German. Second semester. One hour.

Prerequisite: Course 11.

15 and 16. Readings in Biological German. First and second semesters. Two hours.

Prerequisite: Course 2 or its equivalent.

17 and 18. Readings in German Chemistry. See Chemistry 33 and 34.

Prerequisite: Course 4 or its equivalent.

## GREEK

Professor Hamblin

Students entering without preparation in the language can begin Greek in College.

1 and 2. Greek for Beginners. An introduction to the Greek language based upon graded selections from Menander, Xenophon, Plato, Herodotus, and the New Testament. By an intensive study of the essential forms, a careful study of the vocabulary of representative Greek authors, and reading easy selections at sight, it is intended to cover in one year an equivalent of the usual Preparatory Course. First and second semesters. Six hours.

3. Plato. The Apology and Crito. Special topics in Greek syntax. The life and influence of Socrates. Selections from the Memorabilia at sight. First semester. Three hours.

**4. Lysias.** Select orations, with sight reading and Prose Composition. A study of Attic Oratory. Second semester. Three hours.

**5 and 6. Greek Drama.** One play each of Aeschylus, Euripides, and Aristophanes. Study of the Greek drama, theatre and meters. The development of drama. First and second semesters. Six hours.

Alternating with Course 7-8.

**7 and 8. New Testament Greek.** Translation of the synoptic gospels; interpretations; Burton's Moods and Tenses; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. First and second semesters. Six hours.

Alternating with Course 5-6.

**9. Greek Civilization.** Political and Constitutional History of Greece. Influence of Greek civilization and thought on the world. Sophomores. First semester. Three hours.

Required of students in the A. B. course who do not elect an ancient language.

**10. Greek Literature in English.** A course especially designed for students in the Scientific courses, that they may become acquainted with some of the Greek masterpieces. The best translations will be studied and explained, and informal lectures will be given on various phases of Greek Literature. Juniors and Seniors. Second semester. Three hours.

**12. Everyday Greek.** Greek words in English, including scientific terms. Intended to teach the use, meaning, and pronunciation of words of Greek origin, to those who have never studied the Greek language. Juniors and Seniors. Second semester. Two hours.

## HISTORY

Professor Colestock

**1. Medieval Europe.** Freshmen. First semester. Three hours. Required in the A.B. course.

**2. Modern Europe to 1815.** Freshmen. Second semester. Three hours.

Required in the A.B. course.

**3. English History to the Elizabethan Period.** First semester. Two hours.

Alternating with History 7.

**4. English History from the Reign of Elizabeth.** Second semester. Two hours.

Alternating with History 8.

**5. American History: To the End of the American Revolution.** First semester. Two hours.

Alternating with History 9.

**6. American History: From Washington to Lincoln.** Second semester. Two hours.

Alternating with History 10.

**7. The Development of the British Empire.** First semester. Two hours.

Alternating with History 3.

**8. English Biography.** Second semester. Two hours.

Alternating with History 4.

**9. American Biography.** First semester. Two hours.

Alternating with History 5.

**10. History of the United States since the Civil War.** Second semester. Two hours.

Alternating with History 6.

**11. Latin America.** First semester. Two hours.

Alternating with History 13.

**12. The Ancient Orient.** Second semester. Two hours.

Alternating with History 14.

**13. Contemporary Europe.** First semester. Two hours.

Alternating with History 11.

**14. The Modern Orient.** Second semester. Two hours.

Alternating with History 12.

## HOME ECONOMICS

Professor Carey, Miss Douglass, Miss Jones, and Mrs. Brown

**1 and 2. Drawing.** Freehand drawing, lettering, perspective, drawing technical finishings in a dress. Sketching of gowns and hats. Freshmen. First and second semesters. Two hours.

**3. Home Decoration.** This course deals with the furnishing of the home. The object of the course is to develop good judgment and taste in the selection and arrangement of furnishings for the home. Sophomores. First semester. One hour.

**4. Costume Design.** Short history of costume. Value of lines in composition. The effect of contrast and combinations. Costume and color for different types. Sophomores. Second semester. Two hours.

Prerequisite: Courses 1, 2.

**5 and 6. Millinery.** Making and covering of frames and fitting and trimming of hats. Juniors. First and second semesters. Six hours.

**7. Hygiene.** Home nursing, care of sick room, care of patients, first aid, simple bandaging, hygienic care of the home, relation of the home to the community. Sophomores. First semester. Three hours.

**8. Garment Making.** Elementary sewing; fundamental stitches, hand and machine work, applied to undergarments, darning, mending, machine appliances. Students provide material subject to the approval of the instructors. Juniors. Second semester. Three hours.

**9 and 10. Clothing.** Dressmaking and drafting, cutting, fitting and making of skirts, waists and dresses, measurements and drafting of patterns, use of commercial patterns. Seniors. First and second semesters. Six hours.

Prerequisite: Courses 1, 2, 4, 8.

**12. Textiles.** Study and identification of cotton, wool, silk, and linen; their appropriateness in clothing. Sophomores. Second semester. One hour.

**13. Meal Preparation and Table Service.** The application of the principles of cookery to the preparation and serving of meals. The course will include the study, planning, cooking and serving of meals, methods of preparation and garnishing. Juniors. First semester. Two hours.

Prerequisite: Course 14, Chemistry 23, 24.

**14. Elementary Course in Foods.** Selection and preparation of foods; their chemical composition and processes of manufacture. Laboratory work emphasizing fundamental principles of cookery. Sophomores. Second semester. Three hours.

**15. Household Management.** Care of house, choice of household equipment, and labor saving devices; apportionment of income. Juniors. First semester. Three hours.

**16. Food and Nutrition.** Food requirements at various ages in health and in certain diseases. Construction of dietaries. Invalid cookery. Juniors. Second semester. Four hours.

Prerequisite: Course 14.

**17. Dietetics.** Food requirements of the individual in health and disease, the nutritive properties of the various foods. Dietaries planned with especial regard to economic and social conditions. Seniors. First semester. Four hours.

Prerequisite: Courses 14, 16.

**18. Institutional Cookery.** Meal-planning with emphasis on the supplying of adequate diet to large groups. Attention to organization of institutional kitchen and lunchroom. Seniors. Second semester. Three hours.

Prerequisite: Courses 14, 16.

**20. Teachers' Course.** Equipment of laboratories; methods of presenting work; correlation with other subjects; planning and presenting lessons. Seniors. Second semester. Three hours.

**22. Advanced Course in Nutrition.** Physiological, bacteriological and chemical problems of food and nutrition. Special work on infant nutrition. Seniors. Second semester. Four hours.

Prerequisite: Courses 14, 16. Chemistry 7, 8, 17, 18.

**23. Descriptive Psychology.** The first semester is given to Descriptive Psychology, in which the facts and laws of the mind are carefully studied. Juniors. First semester. Three hours.

**24. Child Psychology.** A course is also given in Child Psychology, showing the relation of mind and body, and how the ideal of a sound mind in a sound body may be attained. Special attention is given to problems arising out of family and social relations. Juniors. Second semester. Three hours.

Prerequisite: Course 23.

**25. Vocational Psychology.** First semester. Three hours.

Prerequisite: Course 23.

**Household Physics (Physics 1, 2, 11, 12).** This course is designed to provide information relative to domestic engineering by presenting: first, the general principles of the various branches of Physics; second, the household appliances based upon these principles. Classroom work is supplemented by experiments performed in the laboratory by the individual students, and by observation of the methods of installation of various appliances. Juniors. First and second semesters. Six hours. Professor Simpson.

## LATIN

Professor Ballentine

**1 and 2. Course for Beginners.** First and second semesters. Six hours.

**3 and 4. Cicero. (Orations); Vergil (Aeneid).** First and second semesters. Six hours.

Courses 1-2 and 3-4 are offered for those who are not prepared to pursue the regular Freshman elective.

**5 and 6. Cicero. (De Senectute); Pliny (selected letters); Roman Comedy (two or three plays of Terence).** First and second semesters. Six hours.

**7. Livy.** First semester. Three hours.

Prerequisite: Courses 5, 6.

**8. Horace (selections).** Second semester. Three hours.

Prerequisite: Courses 5, 6.



**10. Roman Civilization.** Lectures, prescribed reading. Sophomores. Second semester. Three hours.

Required of students in the A. B. course who do not elect an ancient language.

**11. Juvenal** (the principal Satires). First semester. Three hours.

Alternating with Course 13.

Prerequisite: Course 7.

**13. Tacitus** (Annals). First semester. Three hours.

Alternating with Course 11.

Prerequisite: Course 7.

**14. Plautus** (selected plays). Second semester. Three hours

Alternating with Course 16.

Prerequisite: Course 8.

**16. Latin Poets** (selections). Second semester. Three hours.

Alternating with Course 14.

Prerequisite: Course 8.

**17. Roman Philosophy** (Cicero or Seneca). First semester. Three hours.

Alternating with Course 19.

Prerequisite: Course 7.

**19. Roman Law.** The course does not require a knowledge of the Latin language. Juniors and Seniors. First semester. Three hours.

Alternating with Course 17.

## MATHEMATICS

Professor Bartol, Associate Professor Everett, Mr. Gold,  
and Mrs. Clark

**1. Algebra.** Freshmen. First semester. Four hours. Prescribed for all degrees.

**2. Plane Trigonometry.** Freshmen. Second semester. Two hours. Prescribed for all degrees.

**4. Analytic Geometry.** Freshmen. Second semester. Three hours.

Prescribed in the Engineering and Biology courses: elective in all others.

**6. Solid Geometry and Spherical Trigonometry.** Sophomores. Second semester. Three hours.

A college subject for those not taking an Engineering course or the course in Biology. Open to Freshmen who have had Course 1 or 2.



**7 and 8. Descriptive Geometry.** The course consists in practice in elementary orthographic projection with analytical study. It is basic to Mechanical Drawing. Sophomores. First and second semesters. One hour throughout the year.

Prescribed in the Engineering courses.

**11. Differential Calculus.** The theory is developed in the use of limits. Applications are freely made to the problems of Mechanics. Sophomores. First semester. Three hours. Prerequisite: Course 4.

Prescribed in the Engineering courses: elective in all others.

**12. Integral Calculus.** Frequent applications are made to the problems of Geometry, Astronomy and Physics. Sophomores. Second semester. Three hours. Prerequisite: Courses 4 and 11.

Prescribed in the Engineering courses: elective in all others.

**13. Higher Analytics.** The course covers an elementary treatment of the geometry of three dimensions, surfaces of revolution and higher plane curves. Alternates with Course 15. Juniors and Seniors. First semester. Three hours.

Elective in all the general courses except those of the Engineering departments.

**15. Advanced Algebra.** The course includes an elementary treatment of Determinants and of the Theory of Equations. Alternates with Course 13. Juniors and Seniors. First semester. Three hours.

Elective for all undergraduates except those in the Engineering courses.

**17. Astronomy.** A study of text-book and of instruments in the Observatory, with some practice. Alternates with Course 19. Juniors and Seniors. First semester. Three hours.

Elective except in the Engineering courses.

**19. Differential Equations.** An introductory study. Alternates with Course 17. Juniors and Seniors. First semester. Three hours.

Elective except in the Engineering courses.

Prerequisite: Courses 11 and 12.

**20. The Mathematical Theory of Investments.** An elementary treatment of the subject. Alternates with Course 22. Juniors and Seniors. Second semester. Three hours.

Elective for all undergraduates, except those in the Engineering courses.

**22. Teachers' Mathematics.** A reading course in the history and literature of Mathematics, and a study of present day methods of teaching the subject. Alternates with Course 20. Juniors and Seniors. Second semester. Three hours.

**24. Field Astronomy with Spherical Trigonometry.** Observations are made chiefly with surveying instruments, and computations are made from the students' field notes. Juniors. Second semester. Three hours.

Prescribed in the Civil Engineering course.

**26. Advanced Calculus.** The course includes centroid and moment of inertia problems from Mechanics, with a brief treatment of Differential Equations. Juniors and Seniors. Second semester. Three hours.

Elective to Seniors in Electrical Engineering and Mechanical Engineering, in the Arts course, and to Juniors in Chemical Engineering.

Prerequisite: Courses 11 and 12.

## MECHANICAL ENGINEERING

Professor Burpee, Mr. Kunkel, and Mr. Wilson

**2. Boilers and Engines.** This is a general course dealing in a concrete way with the generation and use of steam for power purposes. The course is largely descriptive and experimental; the text-book work being well supplemented by problems illustrating the subject matter.

The topics covered most fully are the analysis and combustion of fuels; types, construction and setting of boilers together with their auxiliaries. The steam engine and indicator are studied in a general way with special emphasis upon performance of the engine.

The results of the term's work are collected into a single comprehensive form by means of a series of boiler, engine and plant tests which are written up and reported in accordance with the Test Code of the American Society of Mechanical Engineers. Text-book, Gebhardt's "Steam Power Plant Engineering," latest edition. Juniors. Second semester. Four hours.

Prerequisite: Mathematics 11 and 12, and Physics 3 and 4.

**3. Steam Turbines.** In this course the Steam Turbine Theory and Design are taken up in detail. A careful study is made of the principles underlying the Impulse, Reaction and Mixed Turbine. The entire field is gone over and the ideas obtained are collected and expressed by actually computing and drawing designs for two machines, one Impulse and one Reaction or Mixed Turbine. Text-book, Moyer "Steam Turbines", latest edition. Seniors. First semester. Four hours.

Prerequisite: Course 2.

**5. Steam Power Plants.** This course deals with the Power Plant as a whole. The matters receiving the major amount of attention are those pertaining to Condensers, Power Plant Auxiliaries, Piping and the general arrangement of the entire plant.

The work of the course culminates in the form of an original design completely worked out and drawings made showing floor plans and detailed sections of all important parts. Text-book, Gebhardt's "Steam Power Plants Engineering", latest edition. Seniors. First semester. Three hours.

Prerequisite: Course 2.

**6. Steam Boiler Design.** This course is almost purely design in character and dwells upon the construction and strength of pressure vessels of various types. Complete calculations and complete detailed drawings are made for the Return Tubular, Scotch Marine and Locomotive types of boilers. Text-book, Haven and Sweet "Steam Boilers and Pressure Vessels". Seniors. Second semester. Four hours.

Required of Mechanical Engineering students.

**7. Steam Laboratory Experiments.** This course is intended to familiarize the student with the instruments and equipment belonging to the Power Plant. Experiments are made on the steam calorimeter, steam engine, indicator, boiler-feed pump, water and steam meters, pipe insulating materials, steam gauges, recording instruments and flue gas analysis. Juniors. First semester. Two hours.

Prerequisite: Physics 3, 4, 5, 6.

**8. Heating and Ventilating.** In this course a study is made of the various methods of heating and ventilating buildings. Problems are given on the methods of calculating heat losses, removal of foul air and the introduction of fresh air.

Under Direct Heating, hot air, steam vapor and hot water systems are studied. Under Indirect Heating, attention is given to public buildings, theatres, and factories. Complete calculations and drawings for assigned buildings are required of each student. Seniors. Second semester. Four hours.

**9. Automobiles.** In this course the work taken up covers the automobile as a whole and in detail. A study is made of the passenger car, the truck and the tractor.

The text-book work is supplemented by a goodly amount of laboratory work in which cars are torn down and built up and the various parts completely analyzed. Text-book, Hobbs and Elliot "The Gasoline Automobile". Seniors. First semester. Two hours.

Open to Engineering students.

**11. Industrial Management.** This course is intended to give the student an idea of the established methods of managing industrial plants. Various systems of following up work in the plant, classifying materials, keeping of records and dealing with labor are studied. Juniors. First semester. Two hours.

Required of Mechanical Engineering students.

**13. Visiting Plants.** During the latter part of the first semester of the Senior Year the class in steam turbines and power plants spend a week in and about Philadelphia and New York City or in the Pittsburgh district visiting plants manufacturing power machinery. When possible this inspection tour is taken at the time of the Annual Meeting of the American Society of Mechanical Engineers so as to bring the students into touch with the leading engineers of the country.

This trip is required of the Senior Mechanical Engineering students and is open to all engineering students provided satisfactory arrangements can be made with the instructors in charge of their classes.

In addition to the above major tour there are several other tours made to nearby shops and industries where the students have a chance to see in a concrete way the application of the principles they are studying.

The students are not required, but are urged to make these tours. The expense of them is borne by the students themselves.

**Shop Work.** Under this head there are taught three branches: Pattern-Making, Foundry, and Machine Shop Practice. The work runs through the second semester of the Freshman Year and the entire Sophomore Year. The work is carried only so far as is considered necessary in order to give the student an intelligent idea as to how machinery and other articles manufactured from metals are made. No attempt is made to turn out finished mechanics, but it is considered desirable that the engineer to some extent understand the work of the mechanic.

**15. Pattern Making and Foundry Work.** In Pattern Making it is assumed that the student is familiar with the use of wood-working tools. The work starts with the principles involved in the building of actual patterns. Allowances for draught, shrinkage, and machining are taught and the student builds patterns which he afterwards uses in the Foundry.

In Foundry Work a study is made of the composition and uses of moulding sands and other materials used about the Foundry. Green sand molds, both with and without dried cores, are

made and poured. The principles of tamping, venting, gating and the various methods of delivering the pattern from the mold are studied. Attention is given to the construction, operation, and care of the cupola. The student is taught to make the molds, charge the cupola and pour his own flasks.

Pattern Making and Foundry Work must be taken at the same time.

First or second semester. Two hours.

**17. Machine Shop, General Course.** In this course the student is taught the mathematical principles of the lathe and similar machines. He is also taught how to operate the lathe, planer, shaper, milling machine and the drill press.

The lathe work starts with plain cylindrical work and advances through tapers, thread-cutting and making of cut gears. After this work is mastered the student is given instruction in laying out and other operations on the table and bench and finally he does some assembling. The shop practice is supplemented by lectures and problems. First or second semester. Two hours.

Required of all Engineering students.

**18. Machine Shop, Advanced Course.** This course is required of the Mechanical Engineering students only and is very general in character. There is no definite outline for the work, but each student is assigned such pieces to work on as his particular need may require. In many cases the piece is a repair for some bit of machinery about the University.

The course is intended to carry to a more practical point the work of the general course. Students in this course are sometimes asked to assist instructing those in the more elementary course. Sophomores. Second semester. Two hours.

## MUSIC

Professor Stolz and Assistant Professor Moyer

**1 and 2. History and Literature of Music.** First and second semesters. Six hours.

**3 and 4. Musical Appreciation.** First and second semesters. Six hours.

**5 and 6. Theory of Music.** First and second semesters. Six hours.



## PHILOSOPHY

Professor Harris

The studies in this department embrace Psychology, Philosophy, and Ethics.

1. Psychology, Descriptive and Explanatory. First semester. Four hours.

Required of Juniors for A.B. degree.

3. Abnormal Psychology. Lectures, text-book, readings, and thesis. First semester. Three hours.

Physiological and Experimental Psychology. (Biology 31). Professor Davis.

4. Philosophy of Mind. Juniors and Seniors. Second semester. Three hours.

6. History of Philosophy. Text-book and Lectures. Second semester. Two hours.

Required of Juniors for A.B. degree.

Roman Philosophy. (Latin 17). Professor Ballentine.

8. Ethics. Second semester. Three hours.

Required of Juniors for A.B. degree.

10. Ethics of Plato and Aristotle. Study of the Republic and Nicomachean Ethics, with collateral readings and thesis. Juniors and Seniors. Second semester. Three hours.

11. Social Ethics. Domestic Relations. First semester. Three hours.

12. Political Ethics. Duties of Citizenship; Ethics of International Relations, with special reference to present day problems. Second semester. Three hours.

13. History of Recent Philosophy. Darwin, Spencer, and James. Juniors and Seniors. First semester. Three hours.

14. Social Psychology. The development of mental character in society. Juniors and Seniors. Second semester. Three hours.

## PHYSICS

Professor Simpson and Mr. Hall

Physics 1. Mechanics, Heat, and Sound. Physics 1 and 2 are designed for students who desire a general knowledge of Physics in its relation to everyday life. The work in the class room demands only a thorough knowledge of Mathematics as covered in the entrance requirements. Students who desire to teach Physics should supplement these courses with Courses 3 and 4. First semester. Two hours.

Physics 2. Light, Electricity, and Magnetism. A continuation of Course 1. Second semester. Two hours.

Prerequisite: Course 1.



**Physics 3. Mechanics, Heat, and Sound.** Physics 3 and 4 are designed to meet the requirements for later work in the technical courses. They are required in all the Engineering courses and presuppose that the student has passed the Mathematics required in these courses.

The instruction consists of lectures, recitations, and laboratory work. All important phenomena are illustrated and experimental demonstrations of the principal laws are presented. First semester. Three hours.

**Physics 4. Light, Electricity, and Magnetism.** A continuation of Course 3. Second semester. Three hours.

Prerequisite: Course 3.

**Physics 5. Electrical Measurements.** In this course the student is required to make a careful study of the instruments of precision used in electrical testing laboratories for the measurement of current, E. M. F. resistance, capacity, and inductance. A careful study is made of the standard cell and primary and secondary batteries. An exhaustive study is made of the magnetic behavior of iron. Lectures, recitations, and laboratory. First semester. Five hours.

Prerequisite: Courses 3 and 4, Mathematics 11 and 12.

**Physics 6. Heat and Light.** The theory covering the first and second laws of thermodynamics and a large number of problems are studied in the class room. The laboratory work covers the mechanical equivalent of heat; calorimetry, in which the heat value of solid, liquid and gaseous fuels is determined; a careful study is made of electrical methods for measuring temperature. In Light, the student becomes familiar with the spectrometer, spectroscope, interferometer and photometer. Students in Chemical Engineering are required to map emission spectra, study the arc and spark spectra of solids, the spark and flame spectra of liquids and gases, and the absorption spectra of mixtures and coloring materials. Students in Electrical Engineering are required to make a careful study of the efficiency of the various types of electric lamps.

All work in the laboratory is supplemented by written reports in which both general and theoretical results obtained are discussed. These reports afford the basis for criticism of the work. Recitations, lectures, and laboratory.

Second semester. Five hours.

Prerequisite: Course 5.

**Physics 11. Laboratory Work in Mechanics, Heat, and Sound.** Physics 11 and 12 are laboratory courses which accompany Physics 1 and 2. They cover the entire field of Physics in an elementary way. No elaborate quantitative experiments are undertaken. First semester. One hour.

**Physics 12. Laboratory Work in Light, Electricity, and Magnetism.** Second semester. One hour.

**Physics 13. Laboratory Work in Mechanics, Heat, and Sound.** The laboratory work in Physics 13 and 14 includes experiments illustrating the general laws in all branches of Physics. The experiments are largely quantitative and use is made of instruments of precision. The work is entirely individual, the student taking notes in the laboratory which are elaborated outside and presented for criticism. First semester. Two hours.

**Physics 14. Laboratory Work in Light, Electricity, and Magnetism.** Second semester. Two hours.

## ROMANCE LANGUAGES

Professor Griffith, Assistant Professors Boland and Sloan,  
Mrs. Rockwell, and Miss Riess

### FRENCH

**1. Elementary Course.** Grammar, easy reading, practice in writing French. First semester. Three hours.

**2. Grammar, Reading, Practice in Writing French.** Second semester. Three hours.

**3. French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Increasing use of French as the language of the classroom in this and succeeding courses. First semester. Three hours.

**4. French Fiction, Comedy, History, Poetry, Composition, Phonetics.** Second semester. Three hours.

**5. Literature of the Seventeenth Century.** Advanced Composition. History of French literature. First semester. Three hours.

**6. Literature of the Seventeenth Century, continued.** Advanced composition. History of French Literature. Second semester. Three hours.

**7 (a). Eighteenth and Nineteenth Century Authors.** Romanticists and Realists. First semester. Three hours.

**7 (b). French Civilization.** Rapid reading, lectures, reports. First semester. Three hours.

**8 (a). Present Day French Writers.** Second semester. Three hours.

**8 (b).** This course is arranged especially for those preparing to teach French. Second semester. Three hours.

Prerequisite: Course 7 a or 7 b.

### SPANISH

**1. Elementary Course.** Aims to train the student to pronounce correctly, to understand, and to use easily the simpler forms of spoken and written Spanish and to give him a small working vocabulary. First semester. Three hours.

**2. Continuation of Course 1.** Introduction to grammar. Reading of simple prose. Conversation and written composition. Spanish is the language of the class-room in Courses 1 and 2. Second semester. Three hours.

**3. Prose Narratives.** These selections illustrate Spanish life and surroundings. Study of grammar and idiom. First semester. Three hours.

**4. Modern Novels.** Two or three short novels are read for content. Translation of selected passages. Study of more difficult grammatical problems and idiom. Introductory lectures in the history of Spanish literature. Alarcón and Valdés are the authors read. Second semester. Three hours.

**5. Romantic Drama and Poetry of the 19th Century.** Typical works of Moratín, Hertenbusch, Martínez de la Rosa, and Espronceda will be studied. Lectures on the history and characteristics of Romanticism in Spain. First semester. Three hours.

This course alternates with Course 7, and is offered in the odd-numbered years.

Prerequisite: Course 4.

**6. Nineteenth Century Novel.** Typical works of Galdós, Pereda, Fernán Caballero and Blasco-Ibáñez will be read. Second semester. Three hours.

This course alternates with Course 8, and is offered in the even-numbered years.

Prerequisite: Course 5 or 7.

**7. Golden Age Drama.** Lope de Vega, Tirso de Molina, and Calderón de la Barca will be read by the class, with outside reading and reports by individual members. First semester. Three hours.

This course alternates with Course 5, and is offered in the even-numbered years.

Prerequisite: Course 4.

**8. Golden Age Prose.** Selections from the works of Cervantes and selected picaresque novels will be read. Second semester. Three hours.

This course alternates with Course 6, and is offered in the odd-numbered years.

Prerequisite: Course 5 or 7.

## SOCIOLOGY AND LOGIC

Professor \_\_\_\_\_

**2. Anthropology, Descriptive and Physical.** Sophomores. Second semester. Three hours.

**3. Logic, Deductive and Inductive.** Juniors. First semester. Three hours.

**4. Municipal Sociology.** Juniors and Seniors. Second semester. Three hours.

Alternating with Course 6.

**6. Scientific Method, Principles and Analysis.** Juniors and Seniors. Second semester. Three hours.

Alternating with Course 4.

**7. Sociology, Principles and Theory.** Juniors and Seniors. First semester. Three hours.

## SURVEYING

Professor Drum

**1. Plane and Topographical Surveying.** Recitations on text, lectures, tests, field practice in each position on corps using transit, Y, dumpy and hand levels, plane table and compass in surveys for area, for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments.

Civil Engineering course. Sophomores. First semester. Five hours.

Prerequisite: Mathematics 2.

**2. Geodetic Surveying.** Recitations on text, lectures, tests, readings and reports from literature of the U. S. C. G. S. and other sources.

Civil Engineering course. Sophomores. Second semester. Two hours.

**4. Railroad Surveying.** Recitations on text, lectures, tests. Computation, draughting and field practice of simple, compound and spiral curves. Field practice in each position on corps making a preliminary survey for a cross-country railroad. Computations and draughting for determining paper location, including grades, excavation, ver-

tical curves, questions of haul, etc. Field practice in putting in paper location and setting slope stakes. An inspection of portions of the Reading and Pennsylvania tracks in a study of switches, Y's, and crossings.

Civil Engineering course. Sophomores. Second semester. Five hours.

Prerequisite: Course 1.

5. City and Mine Surveying. Standard practice in field and office methods in surveys incidental to city and mine work is given. Problems include simple triangulation and base line work, underground and night surveys in carrying azimuth into mine, locating boreholes, driving tunnels, lining up chambers, etc. Problems are so arranged that the validity of computations may be checked in the field.

Civil Engineering course. Juniors. First semester. Three hours.

Prerequisite: Course 4 and Mathematics 4.

6. Surveying. Course for technical students not of the Civil Engineering Course. Recitations on text, lectures, tests. Field practice in the care, adjustment and use of surveying instruments, in surveys for area, topography, curve location, setting grade stakes, building location, foundations for machinery, etc. Computations and maps. Course restricted to Seniors. Second semester. Three hours.

A complete equipment of transits, levels, compasses, and plane tables with all accessories is maintained. Sections are not permitted to exceed 25 men and for field work the parties seldom exceed 4. Men are rotated in the various positions on the corps. Student assistants are provided when desirable and the work is individual and intensive. The hours mentioned refer to credits carried by the courses. With the exception of Surveying 2 double time is required for class periods.

## PHYSICAL EDUCATION

### MEN

Mr. Glass

The Tustin Gymnasium has been provided for the physical training and development of young men. This is now provided with the apparatus usually found in well-furnished gymnasiums. The Director of the Gymnasium examines every student, taking and recording in a book his physical measurements, and prescribes such exercise as may be required for his physical development.

## WOMEN

Miss MacCann

Physical training is required of all women in the College during Freshman, Sophomore, and Junior years. The course aims to give systematic, progressive exercises which tend to better the health of the students, and to give them grace and muscular co-ordination. Swedish gymnastics, light apparatus work, folk and aesthetic dances and games are taught in four hour periods each week.

The gymnasium is equipped with wands, dumb bells, rings, Indian clubs, pulley weights, and Swedish boom and boxes. There are basket ball and volley ball courts, and equipment for indoor baseball. In September, October, and November field hockey is played, and tennis and track work are taught during April, May, and June. Outdoor sports are encouraged including skating and swimming.

All women are given two physical examinations each year to discover any physical weakness, and to prescribe individual exercises to be practiced each day. There is ample equipment in the gymnasium for these examinations.



## EXPENSES OF STUDENTS PER SEMESTER

### Men

Tuition and General Expenses .....	\$100.00
Unfurnished room, including heat and light.....	15.00
Furnished room, including heat, light and service..	30.00
Extra charge for corner rooms and double rooms ...	3.00
Student Budget.....	8.00

### Women

Tuition and General Expenses .....	\$100.00
Board .....	100.00
Furnished room, including heat and light.....	30.00
Extra charge for rooms in Bucknell Cottage and New Residence Hall .....	7.50
Student Budget.....	8.00

General Expenses include such charges as those for the heating, lighting and use of halls, recitation rooms and the Library. Tuition is rated at \$50 per annum.

The Student Budget is intended to cover charges for various student activities and organizations.

### Department Fees

Biology 6, 9, 13, 14, 25, 26, 28, 29, 30 .....	\$ 5.00
Biology 1, 2, 7, 8, 15, 19, 21, 22.....	10.00
Biology 10, 12.....	10.00—20.00
Chemistry 1, 3, 5, 7, 9, 10, 12, 14 .....	5.00
Chemistry 2, 4, 6, 8, 15, 21, 22, 23, 24, 27, 28 .....	10.00
Chemistry 17, 18, 19, 20, 29, 30 .....	15.00
Chemistry 35, 36 .....	Special
Chemistry—Deposit .....	10.00
Electrical Engineering 1, 2, 9 .....	5.00
Electrical Engineering 5—Deposit .....	5.00
Home Economics 11 .....	2.00

Home Economics 12, 14, 16 .....	5.00
Mechanical Engineering 2 .....	4.00
Mechanical Engineering 7, 9, 18 .....	5.00
Mechanical Engineering 15, 17 .....	6.00
Physics 5, 6 .....	6.00
Physics 11, 12 .....	3.00
Physics 13, 14 .....	4.00
Surveying 1, 4, 5, 6 .....	5.00

### SPECIAL FEES

Enrolment Deposit.....	25.00
Enrolment Deposit—Non-resident Graduate.....	15.00
Room Deposit.....	10.00
Graduation Fee for all degrees.....	15.00
Extra Hour.....	6.00
Semester Hour—Non-resident Graduate.....	3.00
Late Registration.....	3.00
Changed Registration.....	1.00
Special Examination.....	3.00

### Extra Hour

For each semester hour in excess of the minimum semester requirement for the degree for which a student is registered, a special fee of Six Dollars is charged if this extra hour is counted toward a degree.

### Room Deposit

Every student who applies for a dormitory room is required to send a deposit of Ten Dollars to the Registrar with his application, and this amount will be credited on the bill of the next semester.

It is understood that the room is engaged for the whole of the College Year, and that no student can occupy a room for which he has not signed a contract.

Should a student for good reason be unable to enter or to return, the deposit will be refunded provided notice is sent to the Registrar not later than four weeks before the opening of the year for which the amount was credited.

## Payments

A deposit of \$25 for a resident student must be made at the time of enrolment before admission to any classes and the balance of the bill must be paid within thirty days after the beginning of the semester. A deposit of \$15 must be made by each non-resident graduate student at the time of enrolment.

Any student who withdraws voluntarily while in good standing, not more than two weeks after the opening of the semester, shall be entitled to a refund of ninety per cent. of his dues for the semester.

Any student who withdraws voluntarily, while in good standing, more than two weeks after the opening of the semester shall be charged for two weeks in excess of the time from the opening of the semester to the date of withdrawal.

No refund is made to any student who is requested to withdraw on account of conduct or poor scholarship.

## Dormitory Rooms

An unfurnished room in a men's dormitory contains a bed six feet by three feet and a wardrobe.

A furnished room in a men's dormitory contains a bed six feet by three feet, a mattress, two sheets, counterpane, pillow, pillow case; wardrobe, commode, table, two chairs, and a rug. The room is cared for and the bedding is laundered.

A furnished room in a women's dormitory contains a bed six feet by three feet, a mattress, bureau, commode, wardrobe, table, two chairs and a rug.

## Board

Board is provided for women students at the Women's College. Men students can secure board at the various boarding places in town.

# GENERAL REGULATIONS

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## Attendance

Regular attendance is required upon all work in a student's course of study and at the Chapel exercises. Absences, in excess of a limited number, necessarily affect the class standing of a student. The details of the regulations in regard to absences are prescribed by the Faculty Committee on Attendance and Standing. Every student who withdraws from the University should notify the Registrar at the time of withdrawal.

## Standing

The standing of a student in each course is computed on a scale of 100 and is so reported to the Dean's Office. The report, which is sent to parent or guardian, is recorded by use of the letters A, B, C, D, E, F, I, N, and Abs. A, signifies a standing from 90 to 100; B, signifies a standing from 80 to 89; C, signifies a standing from 70 to 79; D, signifies a standing from 60 to 69; E, signifies a standing from 50 to 59 and a condition; F, signifies a failure; I, signifies incomplete and no requirement of a second examination; N, signifies incomplete class room work and unsatisfactory final examination; Abs., signifies absence from final examination.

## Degrees With Distinction

The Degree of Bachelor of Arts or of Bachelor of Science with distinction is awarded as follows:

Cum Laude. A candidate is recommended for a degree

*Cum Laude* who has obtained a grade of "A" in one-half of his courses, due weight being given to the number of semester hours in each course.

Magna Cum Laude. A candidate is recommended for a degree *Magna Cum Laude* who has obtained a grade of "A" in three-fourths of his courses, due weight being given to the number of semester hours in each course.

Summa Cum Laude. A candidate is recommended for a degree *Summa Cum Laude* who has obtained a grade of "A" in seven-eighths of his courses, due weight being given to the number of semester hours in each course, and who has been in residence at Bucknell University at least three years.

### Examinations

The dates of examinations are given in the Calendar. In case a student fails to be present at the examination of his class, for any justifiable reason, his examination will be held at such time as the Faculty may appoint, but in no case is an examination granted a student in advance of the time appointed for the examination of the class.

Unless for very good reasons to the contrary, a student who is granted a special examination will be required to pay a fee of three dollars therefor.

### Public Worship

The College holds religious service in Bucknell Hall. The student body is divided into two sections; each section meets twice a week.

The Women's College holds also an evening service in the Main Building of the Women's College.

### Government

It is assumed that all who enter upon the courses of study in the College do so for the purpose of acquiring an education. The atmosphere of the institution is not that of arbitrary restraint, but of reasonable conformity to reasonable requirements. The College does not wish to place its stamp or bestow its honors upon any one who is not willing to deport himself as a gentleman. Each student is distinctly placed upon his manhood, and if he abuses his privileges, after reasonable caution, he must withdraw from the institution, at the request of the Presi-

lent. Consistent with this ideal the students, with the sanction and cooperation of the Faculty, have organized the Senior Council composed of College men, and the Student Government Association composed of College women. Their function is to cooperate with the Faculty in maintaining the traditions and good order of the College both on and off the campus.

#### **Office Hours—The President**

The President of the University is in his office in the Main College building each morning from nine to ten, if possible. Students are at liberty to call upon him at his home at any time.

#### **Office Hours—The Dean**

The Dean is in his office in the Main Building at specified hours. He also meets students by special appointment.

#### **Office Hours—The Dean of Women**

The Dean of Women will meet in her office College women who may desire advice or assistance from her.

#### **Office Hours—The Registrar**

The office is open during the week 8:30 A. M. — 12 M. and 1:30 P. M. — 5 P. M. The Registrar will meet students for consultation at his office.



## PRIZES

The following prizes are awarded to the students who in the judgment of appropriate committees attain the highest degree of excellence among the respective competitors, but no prize is bestowed unless a high degree of merit has been attained by the person receiving it.

### The Prize of the Class of 1871

A prize, established by the Class of 1871, is awarded to the member of the Freshman Class who shall prove himself best prepared for College in the two branches, Latin and Mathematics.

The prize was awarded in 1922 to Margaret Dorothy Ackerman.

### The Freshman Declamation Prize

A prize is awarded to the member of the Freshman Class who shall excel in declamation at the Annual Contest of the Freshman Class.

The prize was awarded in 1922 to George Richard Faint.

### The Sophomore Prize in Public Speaking

A prize is awarded to the member of the Sophomore Class who shall excel in public speaking at the Annual Contest of the Sophomore Class.

The prize was awarded in 1922 to Wendell Holmes Woodside.

### Declamation Prizes for Women

Prizes for the best declamation are open for competition to the Sophomore and Freshman Classes. The prize for the Freshman Class was awarded in 1922 to Anna Lippincott Engle.

The prize for the Sophomore Class was awarded in 1922 to Ruth Hamilton Weidenhamer.

### **The Gretzinger Prize**

In honor of William C. Gretzinger, A.M., the first Registrar, the University offers a prize to that member of the Junior Class who shall pronounce the best oration at the Junior Exhibition in Oratory.

The prize was awarded in 1922 to Lewis Leroy Hutchinson. A collateral prize was awarded in 1922 to Isabella Reinhardt Webster.

### **The Junior Debate Prizes**

Prizes are awarded to the two members of the Junior Class who evince superiority in debate at the Junior prize contest. No exhibition was held in 1922.

### **The Herbert Tustin Prizes**

In memory of his deceased son, the late Professor Francis Wayland Tustin, Ph.D., of the Class of 1856 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Tustin Prize Fund, the interest of which is to be forever paid annually as two prizes, in the proportion of fifteen dollars for the First Prize, and ten dollars for the Second Prize, to the two students of the Senior Class who shall have attained the highest and the second highest standing in Psychology and Ethics (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception".

The first prize was awarded in 1922 to Dorothy Luana Davis, and the second to Nelson Fithian Davis, Jr.

### **The Herbert Goodman Barrows Prize**

In memory of his son, the Reverend William Barrows, A.M., of the Class of 1867 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Goodman Barrows Prize Fund, the interest

of which is to be forever paid annually as two prizes of equal amounts to the student or two students of the Senior Class who shall have attained the highest standing, respectively, in the Latin and in the Greek language and literature (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception”.

The prize for excellence in Latin was not awarded in 1922. The prize for excellence in Greek was awarded in 1922 to Norman Roy Appleton.

### The Chaplain J. J. Kane Prize

The Reverend James J. Kane, A.M., Chaplain in the United States Navy, and a graduate from the Theological Department of this University, of the Class of 1867, established a prize which is to be given annually to that member of the graduating class who delivers the best oration on Commencement Day.

The prize was awarded in 1922 to William Herbert Sugden.

### The Bucknell Prizes for Women

The following prizes for women were founded by William Bucknell through a gift of \$2,000. The income from this fund is to be devoted to these prizes annually in a manner more particularly defined in the donor's communication to the Trustees.

1. A Senior Prize to be awarded to the member of the graduating class of the College, who shall attain the highest grade in the studies of the four years' College Course.

The prize was awarded in 1922 to Eloise Ernestine Hill.

2. A Senior Prize, to be awarded to the member of the graduating class who, being excellent in scholarship during the Senior Year, shall prepare the best essay.

The prize was awarded in 1922 to Marie Josephine Chambers.

3. A Junior Prize, to be awarded to the member of the Junior Class, who, being excellent in scholarship during the Junior Year, shall prepare the best essay.

The prize was awarded in 1922 to Marion Delphine Murphy.

4. A Sophomore Prize, to be awarded to the member of the Sophomore Class who, being excellent in scholarship during the Sophomore year, shall prepare the best essay.

The prize was awarded in 1922 to Lois Hall Hamblin.

5. A Freshman Prize, to be awarded to the member of the Freshman Class who, being excellent in scholarship during the Freshman year, shall prepare the best essay.

The prize was awarded in 1922 to Ellen Virginia Scott.

Themes for the Bucknell Essay Prizes will be drawn from works which will be announced by the Professor of Rhetoric each year.

### The Margaret Tustin O'Hara Prize

A prize, established by Margaret Tustin O'Hara, is awarded by a special committee to the young woman in the Senior class who ranks highest in the qualities of Rhodes Scholars.

The prize was awarded in 1922 to Esther Marie Fleming.

## SCHOLARSHIPS

**General Regulations.** Scholarships under the control of the University are held subject to the following regulations:

1. Application for a scholarship for any college year should be made before the first of June of the preceding year.

2. Scholarships are held subject to semi-annual renewal, the renewal being conditioned upon the maintenance of an average grade of 80, the continuance of good behavior and the assurance of continued financial need.

3. Credit for half the amount of the scholarship is given at the beginning of each semester.

4. Any student who transfers to another college must refund all scholarship money previously received.

5. A Permanent Committee on Scholarships, consisting of the President, the Dean, and the Registrar, has charge of all awards.

### FUNDED SCHOLARSHIPS

1. The William Bucknell Scholarships, twenty in number, were established by a gift of \$20,000 for the purpose of aiding worthy young men in securing an education with which to increase their usefulness in life. The income from the fund is to be paid annually to twenty young men, in accordance with rules which will be made known upon application to the committee.

2. The Longan Scholarship was established by a legacy of O. W. Longan, Esq., and is available for a student for the ministry from Lycoming County, Pennsylvania.

3. The Lewis E. Jones Scholarship was established by a legacy of the late Lewis E. Jones and is available for a student of Welsh descent.

4. The John Howard Hare Scholarship was established by the Reverend Calvin Aurand Hare, A. M., in memory of his son, John Howard Hare, and is available for a student for the ministry upon recommendation of the Pennsylvania Baptist Education Society and of the President of the University.

5. The Velola E. Hall Scholarship was established by the Reverend Henry Chandler Hall, A. M., Class of 1882, in memory of his daughter, Velola E. Hall, A. B., Class of 1904, and is available for a student in the Women's College.

6. The William V. Wilson Scholarships, two in number, were established in memory of the Reverend William V. Wilson, D. D., of New Jersey.

7. The Esther Owens Scholarship was established by a gift of Miss Esther Owens.

8. The William Albion Cook Scholarship was established by Mrs. Augusta M. Cook in memory of her son, William Albion Cook, Class of 1899, and is available for a student in the Men's College.

9. The Weaver Scholarships were established by a fund of \$10,000, the gift of Colonel Joseph Kerr Weaver, A. M., M. D., Class of 1861, and were named by action of the Board of Trustees in honor of Doctor and Mrs. Joseph K. Weaver. These scholarships are available under the rules and provide \$150 each for three students.

10. The Ministers' and Missionaries' Children Scholarships are established upon the general foundation for the benefit of the children of ministers and missionaries in active service without distinction as to religious denomination.

11. The Livingston Scholarships, twenty-two in number, established by a legacy of M. B. Livingston, and the Farwell Scholarship, established by Samuel S. Farwell, are



available for students of the ministry designated by the Pennsylvania Baptist Education Society.

12. The Franklin Mathews Service Scholarships, forty in number, were established by Dr. Franklin Mathews, Class of 1868. They provide \$50 each in return for which service is required to the amount of the scholarship.

13. The Jack Culberson Kress Service Scholarships, ten in number, provide \$50 each in return for which service is required to the amount of the scholarship.

14. The Philadelphia Alumnae Scholarship was founded by the Philadelphia Alumnae Club, and is available for a woman student from Philadelphia designated by the Club.

### THE LOAN FUND FOR WOMEN

In June, 1887, there was organized a society for the purpose of assisting young women of limited means to obtain an education. A fund was established by gifts from Alumnae and friends, and is controlled by an Executive Board.

The money is loaned to worthy young women who obligate themselves to return it without interest as soon after graduation as they may be able.

Applications for loans should be made to the Executive Board before the opening of each semester. No loans are granted until the applicant has been a student in the College for at least one semester.

Contributions to the Fund are solicited and should be sent to the Treasurer, Mrs. J. T. Judd, Lewisburg, Pa. A contribution of one hundred dollars constitutes the donor a Life Member of the Society.

Information will be given by the President, Mrs. Katherine B. Larison, Lewisburg, Pa., or by the Secretary, Mrs. Llewellyn Phillips, Lewisburg, Pa.

# COLLEGE ACTIVITIES

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## REGULATIONS

The College encourages and directs all activities consonant with the normal life of college students. The Faculty, therefore, has appointed a committee on student activities and has defined its duty to be:

(1) to supervise the accounting and to audit the accounts of all college organizations, non-fraternity in nature, that collect and disburse funds and whose management is not controlled by the Board of Trustees,

(2) to pass upon the scheduling of all public activities of organizations of the College not controlled by the Board of Trustees and to pass upon the scholastic eligibility of students participating in all public activities.

The treasurer of any college organization, class or committee is required to submit his accounts for audit to the committee at least once a year or as frequently as requested by the committee.

Before any public activity of those student organizations under the jurisdiction of the committee on student activities is scheduled, application for permission and a date must be made in writing to the committee. The committee on student activities has the right to prohibit a student from participating in any public activity whenever, in the opinion of the committee, such participation is detrimental to his college work.

## ATHLETIC ASSOCIATION

The Athletic Association of the College has been formed to encourage and regulate athletic sports. This Association in all its activities is subject to Faculty regulations and supervision, but considerable liberty is allowed it in carrying out its purpose. The usual intercollegiate sports are

fostered, and match games are arranged with other colleges. The general management of athletics is in the hands of a committee, consisting of the President of the Athletic Association, the President of the University, ex officio, two faculty members, chosen by the faculty or appointed by the President of the University, and twelve alumni, appointed by the Board of Trustees. The business management of the Association is in the hands of a graduate manager.

### CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association aims to maintain religious ideals and to promote religious knowledge among the men of the College. It holds regular devotional meetings and conducts Bible and mission study classes.

The Young Women's Christian Association holds regular meetings on Tuesday evenings. It aims to maintain a religious atmosphere in the Women's College and it also conducts Bible and mission study classes.

### CLASS ORGANIZATION

Each class is organized with a president and the other usual officers. The classes meet for the election of officers on the first Friday of the College year at three o'clock in the afternoon. The officers thus elected serve for one year or until their successors qualify.

### DEPARTMENT CLUBS AND SOCIETIES

The medical students have organized a Medical Society. The Department of Mathematics has organized the Bucknell Mathematics Club. Other departments have similar organizations. The Civil Engineering, the Chemical Engineering, the Electrical Engineering, and the Mechanical Engineering students have their respective societies. The last two are branches of national societies and

hence local members are accorded the privileges of the national bodies. All these organizations hold regular meetings. Members present original papers and at times lecturers of prominence address the societies.

## DRAMATIC, LITERARY, AND MUSICAL ORGANIZATIONS

The young women of the College have established the Frill and Frown, the young men the Cap and Dagger. Both of these dramatic organizations present each year at least one play. There is also a national dramatic fraternity, Theta Alpha Phi.

There are an association for the promotion of Inter-collegiate Debating, and a national debating fraternity, Tau Kappa Alpha.

The Lyceum has been organized to promote expression in art and literature.

There are two Glee Clubs; one composed of young men, the other of young women. They hold regular rehearsals and give concerts at the College and in adjacent cities. During the vacations the Glee Club composed of young men makes tours.

## FRATERNITIES

No student is permitted to join a fraternity until he has received a certificate from the President of the University, under seal, that he has been a student for one year in the College, that he has completed one year's work and that his conduct has been satisfactory. However, a student who has completed one year's work at another college may join

a fraternity at the close of the first semester, provided his conduct has been satisfactory.

### STUDENT PUBLICATIONS

The students of the College publish a weekly paper, the Bucknellian, a quarterly magazine, The Mirror, and also a daily Commencement News during Commencement Week. The Junior Class publishes every year an annual, L'Agenda; the Y. M. C. A., The Handbook.

# SEVENTY-SECOND ANNUAL COMMENCEMENT

Wednesday, June 14, 1922

## DEGREES AWARDED

### Bachelor of Arts

Donald Cargill Allen  
Anna Kathryn Althouse  
Mary Elizabeth Appleman  
Norman Roy Appleton  
William Westley Baird  
Nellie Carol Balliet  
Fred Sturges Beers  
Ruth Hanna Brown  
Eve Bolles Bunnell  
Jennie Burke  
Philip Clarence Campbell  
Marie Josephine Chambers  
Florence Dorothy Cornwell  
Forest Franklin Dagle  
Howard Thomas Davenport  
Darle Faye Davis  
Nelson Fithian Davis, Jr.  
William LeRoy DeHaven  
Lillian Jane Derr  
Leona Sophia Dickrager  
Charles Emory Diffendafer  
Merrill Franklin Fairheller  
Margery Genea Farley  
Harold Gustav Florin  
Edna Mae Follmer  
Grace Carver Fry  
Lewis Gene Griffiths  
Eloise Ernestine Hill  
William Alexander Hoffman, Jr.  
William Jackson Irvin  
Carmault Benjamin Jackson  
William Spencer Johnson  
Helen Louise Johnston  
Finley Keech  
Arnold Oakley Kenyon

Ruth King  
Harriet Pauline Kinsman  
Angeline Ruth Kissinger  
Leander Swartz Klingman  
Emma Lillian Kunkle  
Elizabeth Laedlein  
Lawrence Winters Lawson  
Mary Louise Llewellyn  
Corinne MacNamara  
Howard Harrison Moore  
James Frederick Moore  
Mary Rachael Park  
Kathryn Davis Pettigrew  
Susanna Harris Plummer  
Grace Poust  
Henry Clay Reed  
Samuel Perry Rogers  
Evan Willis Ross  
Ray Pauline Seaman  
Marvin Ayres Searles  
Amorita Muriel Sesinger  
Edouard Burnside Sisserson  
Donald Peter Smith  
Ethelwynne Mae Smith  
Laura Louise Smith  
Hugh Penn Sowers  
Catherine Young Stahl  
Hannah Edith Steely  
Louis Karl Stuntzner  
William Herbert Sugden  
Edwin Wesley Treadwell  
Frances Edsall VanCleaf  
Stuart Mitchell Walter  
Clara Wasilewski  
Charles Imbrie Wilson



**Bachelor of Science**

Charles Bunnell Sipley

William Charles Arthur Willman

**Bachelor of Science in Biology**

Edward Craver Crowl

Isaac Humphrey

Daniel Webster Davis

Helen Felicia Kitlowski

Charles Raymond Dwyer

Reba Eva Mackenthun

Myra Catherine Effinger

William Henry Morrison, Jr.

Mark Kuebler Gass

Ignas Martin Stadulis

Bright Ellsworth Greiner

Roy Bratton Stine

George Webster Haupt

Herman Ernest Wiant

**Bachelor of Science in Chemical Engineering**

Alexander Aloysius Aleshouckas

Roy Horst Landis

John Robert Beers

William Curtis Litterer

Richard Kempton Estelow

Emerson Ralph Miller

Karl Krug

Phillip Edgar Opp

John Calvin Stahl

**Bachelor of Science in Civil Engineering**

George Raymond Crawford

Wade Ferguson Hoffman

Walter Denton Galbraith

Oliver Linton King

Arthur Funk Gardner

Isaac Levine

Robert John Haberstroh

William Jennings Rinebold

Ralph Franklin Hartz

Edward George Wentzel, Jr.

**Bachelor of Science in Electrical Engineering**

Gordon Preston Bechtel

Welles Norwood Lowry

Henry Harmon Bliss, Jr.

James Gillaspy Myerly

William Powell Day

Harry Edward Schaffer

Robert Earl Lepperd

Freeman Thayer Tingley

Elmer LaRue Worthington

**Bachelor of Science in Mechanical Engineering**

John Detki Alexander

Hugh David Kyttle

Sanford Berninger

George Mathieson

Ivar Carl Carson

Stewart Ungo Patton

William Henry Collins

Harry Immanuel Peterson

Chester Henry Derck

Grover Russell Short

Frederick Alfred Foxall

Thomas Reber Stein

Adam Alfred Klein

Paul Augustus Weaver

Joseph Kostos

Robert Alfred Williams

**Bachelor of Science in Home Economics**

Rhea Ardelle Burgett  
 Elizabeth Couffer  
 Dorothy Luana Davis  
 Esther Marie Fleming  
 Hulda Dorothea Heim

Effie Muir  
 Janice Raikes  
 Ethel Reba Richardson  
 Mary Eldridge Sholl  
 Grace Matilda Swan

**Master of Arts**

David Nathaniel Boswell, A.B.  
 Claire Marie Conway, A.B.  
 Herbert Spencer Lloyd, Ph.B.

Catherine Frazer MacLaggan,  
 A.B.  
 Harry Redcay Warfel, A.B.  
 Elizabeth VanScoyoc Weidner, Ph.B.

**Master of Science in Biology**

Catherine DeEtte Edgett, B.S.  
 Chester Scott Keefer, B.S.

Herman Dean Shultz, B.S.  
 Raymond Deily Tice, B.S.

**Master of Science in Electrical Engineering**

Holmes Tomlin Douglass, B.S.

**Civil Engineer**

Charles Bryant Drake, B.S.

**DEGREES WITH DISTINCTION****Magna Cum Laude**

Ruth Hanna Brown  
 Elizabeth Couffer  
 Dorothy Luana Davis  
 Edna Mae Follmer

Walter Denton Galbraith  
 Eloise Ernestine Hill  
 Grace Poust  
 Hannah Edith Steeley

**Cum Laude**

Anna Kathryn Althouse  
 Mary Elizabeth Appleman  
 Norman Roy Appleton  
 Nellie Carol Balliet  
 Fred Sturges Beers  
 Eve Bolles Bunnell  
 Rhea Ardelle Burgett  
 Florence Dorothy-Cornwell  
 George Raymond Crawford  
 Darle Faye Davis  
 Nelson Fithian Davis, Jr.  
 Leona Sophia Dickrager  
 Charles Emory Diffendafer

Esther Marie Fleming  
 Robert John Haberstroh  
 William Alexander Hoffman, Jr.  
 William Spencer Johnson  
 Ruth King  
 Emma Lillian Kunkle  
 Welles Norwood Lowry  
 Mary Eldridge Sholl  
 Ethelwynne Mae Smith  
 Catherine Young Stahl  
 William Herbert Sugden  
 Freeman Thayer Tingley  
 Edward George Wentzel, Jr.

**HONORARY DEGREES****Doctor of Letters**

Homer Dewilton Brookins

**Doctor of Science**

Ezra Allen

William Henry Llewellyn

**Doctor of Divinity**

Charles Edward Goodall

James Madison Hare

Edward Charles Kunkle

# STUDENTS

## GRADUATE STUDENTS

## Name

## Address

Mary Barrick Beatty, B.S. 1918	Lewisburg
Nelson Fithian Davis, Jr., A.B. 1922	Lewisburg
Sarah Savilla Dietrick, A.B. ( <i>Wellesley</i> ) 1918	Watsontown
Harry Scheidy Everett, A.B. 1912, A.M. 1913, Sc.M. 1914, Ph.D. ( <i>Chicago</i> ) 1922	Lewisburg
Luther Paul Ilgen, A.B. 1921	Mifflinburg
Welles Norwood Lowry, B.S. in E.E. 1922	Carbondale
Reba Eva Mackenthun, B.S. 1922	Philadelphia
Marion Riess, A.B. 1920	Mercedes, Texas
Harold Augustus Shaffer, A.B. 1913, B.S. in E.E. 1914	Lewisburg

## SENIORS: CLASS OF 1923

## Name

## Address

John Alexander Ammerman	Dallas
Dorothy Auer	Norristown
Marian Ayars	Millville, N. J.
Mary Ethel Bailey	Latrobe
Frank Stanley Bartosawicz	Mt. Carmel
Constance Hunting Bennett	Newark, N. J.
Raymond Rearick Beyer	Bloomsburg
Eugene Stull Biddle	Muncy
Victor Augustin Bihl	Harrisburg
Olive Winfred Billhime	Turbotville
Charles Richard Birch	St. Clair
George Leonard Black	Williamsport
Arda Crawford Bowser	Ford City
Cornelia Ruth Boyd	Dover, N. J.
Jessie Kesson Brookes	Philadelphia
Cleon Ferris Buck	Hughesville
Charles Theodore Bunting	Trenton, N. J.
Ellsworth Eede Caldwell	Rochester, N. Y.
Harry Miller Calhoun	Port Allegany
Willard Douglass Callender	Thompson
Worthington Candrick	Olyphant
Lyell Carr	Conneautville
Joy Pross Carulla	Lewisburg
Donald Bryan Cloward	Wilmington, Del.
Edmund Pearre Coe	Factoryville
Carlotta Harriet Conrad	Binghamton, N. Y.

Name	Address
Paul Bonynges Cooley	Lewisburg
Bertha Ella Cupp	South Williamsport
Frank Bernard Daniels	Wilkes-Barre
Donald Alderdice Davis	Homestead
John Anderson Davis	Nanticoke
Robert Mitman Dawson	Watsonstown
Earl DeCoursey	Newtown
Ellis Warren Deibler	Shamokin
Eli Raymond Strunk DeTurk	Griesemersville
Margaret DeWees	Montrose
Frieda Eva Ebner	Glassboro, N. J.
Gladys Emerick	Shamokin
Edgar Eugene English	Jersey Shore
Hazel Marie Farquhar	West Brownsville
Helen Jean Ferguson	Pittsburgh
Anna Marie Fisher	Reading
Elva Berniece Flanagan	Pittsburgh
Howard Nangle Fry	Shillington
Lloyd Charles Fry	Montgomery
Joseph Harlyn Fulmer	Olean, N. Y.
Enoch Anthony Gdaniec	Mt. Carmel
Andrew Martin Gehret	Shillington
William George Gehring	Bridgeton, N. J.
Francis Howard Gibson	Wilkes-Barre
Carl Frank Goerlitz	Scranton
Elmer John Gray	Torrance
Nevin Henry Grieb	Tylersville
Dalzell Melvin Griffith	Johnstown
Mary Elizabeth Grove	Lewisburg
Lucile Anita Gutelius	Lewisburg
Byron William Hahn	Wilkes-Barre
Clair William Halligan	Ephrata
Elinor Solly Hanna	Philadelphia
Paul Edward Harding	Williamsport
Perilla Ravina Harner	Mt. Carmel
Jennie Margaret Harrington	Weston, W. Va.
Robert Joseph Hartlieb	Lebanon
Alford Herbert Haslam	Palmerton
Mildred Alice Hayden	Greensburg
Mary Gertrude Heilman	Oakmont
Miles Henninger	Shamokin

Name	Address
Ethel Mary Henry	Lewisburg
Walter Liddel Hill, Jr.	Scranton
Cyrus Hoffa	Wilkes-Barre
Daniel Walker Holloway	Alden Station
Frank Warren Homan, Jr.	Philadelphia
Florence Elizabeth Horam	Lewisburg
Leicester Hipple Horam	Lewisburg
Anna Horoschak	Perth Amboy, N. J.
Harold Steiner Hunsicker	Portland, Ind.
Elizabeth Hurst	Norristown
Lewis Leroy Hutchinson	Reading
Richard Kelly Hutchison	Altoona
Marion Aleths Jack	Wayne, N. J.
Alfred Voris Jacobs	Danville
Jean Pearle Johns	Cresson
James Hayes Jolly	Pittsville
George Hadfield Jones	Homestead
Harry Walter Jones	Centralia
Alvin Fred Julian	Reading
Frances Dorando Keough	Chester, N. J.
Helyn May Kerstetter	Lewisburg
Edith Leone Kieser	Milton
Lawrence Myron Kimball	Vineland, N. J.
Kathryn Chance Kimble	Vineland, N. J.
Stanley Vincent Kostos	Pittsburgh
Willard Edwin Kramer	Oil City
Jacob Henry Kutz	Douglassville
Anna Margaret Lees	Juniata
Ruth Ellen Leitzel	Lewisburg
Arlington Reuben Lewis	Palmerton
George Washington Lewis	Vineland, N. J.
Lawrence Delroy Lewis	Watsontown
Vivian Beatrice Livingston	Jersey Shore
Kenneth Aldrich Lowry	Friendship, N. Y.
Vernard Elmer Lozier	Stanhope, N. J.
Harold Charles McGraw	Philadelphia
Everitt Samuel McHenry	Hazleton
Paul Carew Mallay	Stanhope, N. J.
Miriam Markham	Washington, D. C.
Robert Markowitz	Pottstown
Charles William Miller, Jr.	Pittsburgh



Name	Address
Luther Frederick Miller	Milton
Alice Pearl Minch	Tyler Hill
Benjamin Stanley Moore	Pitman, N. J.
Margaret Morgan	Blakely
Norman Watkins Morgan	Nanticoke
Dewey William Morrett	Steelton
Marion Delphine Murphy	Scranton
Natalie Elizabeth Musser	Lewisburg
Thomas McKinley Musser	Mifflinburg
Katherine Lucile Owens	Lewisburg
Lloyd Custer Palmer	Johnstown
John Straw Purnell	Lewisburg
Frank Wesley Ransom	Kingston
Elmer Lee Reiter	Montoursville
George Reading Rentz	Williamsport
Ruth Adele Reuhl	Roselle, N. J.
Samuel Harmer Rickard, Jr.	Philadelphia
Robert Elven Ross	Ridgway
Bryan Crest Rothfuss	Montoursville
Alma Winifred Royer	Hazleton
David Arthur Sangston	McClellandtown
Geraldine Schmucker	Watsonstown
Elsie Donaldson Schuyler	Lewisburg
Martha Marie Shafer	Hoboken, N. J.
Walter Blanchard Shaw	Lewisburg
Richard William Sheffer	York
Dorothy Broome Sholl	Burlington, N. J.
Pennell McCoy Shumaker	Sunbury
Margaret Elizabeth Smail	Williamsport
Bertha Louise Smith	Philadelphia
Donald Rylance Smith	Lewisburg
Nina Grace Smith	Dawson
Wesley Edward Smith	Altoona
George Washington Sour	Jersey Shore
Earl Emmanuel Sousley	Hamburg
Anna May Speare	Lewisburg
Harry Edward Stabler	Endicott, N. Y.
Jennie Ethleen Stackhouse	Lewisburg
Luke Lincoln Stager	Lebanon
Joseph Homer Steele	New Alexandria
Charles Leonard Steiner, Jr.	Uniontown

Name	Address
Frank William Summerfield	Philadelphia
Harriet Wallower Swartz	Penbrook
Rupert Morris Sweetland	Mills
Harold Womer Tench	Wilkes-Barre
William John Thomas	Nesquehoning
Edna Tompkins	Paterson, N. J.
Harold Franklin Vandermark	Nanticoke
Kathryn Franian Wainright	Lewisburg
James Howard Walter	Claysburg
Isabella Reinhardt Webster	Conshohocken
George Felter Wendell	Honesdale
Haydn James White	Olyphant
Dorothy Frances Wilhelm	Williamsport
Foster Charles Wilson	Olyphant
Herbert Oscar Wilson	Pittston
George Carbon Wolfe	Williamsport
Glenin Wesley Wolfe	Milton
William Guy Woodring	Reynoldsville
Frank Cort Wright	Latrobe
Russell Decker Yearick	Nittany
Gail Borden Young	Plymouth

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### JUNIORS: CLASS OF 1924

Name	Address
Grace Hope Allardice	Meshoppen
Franklin Davis Arnold	Lewisburg
Edward Thomas Ashman	Nanticoke
Earl Jacob Axe	New Cumberland
Mabel Elizabeth Baker	Vicksburg
George Bellak	Johnstown
Louise Morgan Benshoff	Johnstown
Eleanor Ruth Berry	Mifflinburg
Charles Frederick Bird	Jeannette
John Cooper Bird	Shamokin
Dorothy Jane Bissell	Rochester, N. Y.
Glenn Richard Bower	Berwick
Henry William Bressler, Jr.	Sunbury
Edward Bridges	Palmyra, N. J.
Mildred Alice Brown	Meshoppen
Mary Anna Brownmiller	Shoemakersville

Name	Address
Charles Kenneth Budd	Budd Lake, N. J.
John Dwight Butzer	Smethport
Earl Keays Carpenter	Jamestown, N. Y.
Jennie Elizabeth Clark	Mahaffey
Mildred Louise Clayton	Meshoppen
Mary Mildred Clower	West Chester
Kenneth Lorne Cober	Williamsport
Merl Greene Colvin	Forest City
Adolpho Concha-Goubert	Bogota, Columbia
Daniel Allen Copenhaver	Hershey
Anna Mary Coyne	Philadelphia
Malcolm Paul Crandell	Towanda
Charles Tice Crosier	Salem, N. J.
Rose Olive Curtis	Waymart
Elmer Custer	Johnstown
Charles Frederick Dandois	Jersey Shore
Florence Turner Dare	Bridgeton, N. J.
Ethel Muriel Davis	West Chester
Cecil Preston Dawson	Watsonstown
Harry Oscar Dayhoff	Steelton
Ellis Roy Defibaugh	Wilkinsburg
Hilda Bernitice DeWitt	Sunbury
Iva Irene DeWitt	Sunbury
John Joseph Dietrich	Reading
Charles Weiser Dinger	Reynoldsville
Chester Arthur Drenning	Wrightsville
Earl Sylvester Dunlap	Montoursville
Helen Kathryn Dunsmore	Philipsburg
Willard Nesbit Durbin	Plymouth
Mary Lillian Edmunds	Pittsburgh
Mary Emily Eisenmenger	Williamsport
Frank Fremont Elliott	Parker's Landing
Carl August Erickson	Great Neck, N. Y.
Mildred Louise Evans	Wilkes-Barre
Margaret Ellen Everitt	Allenwood
Helen Evelyn Fairfax	Williamsport
George Austin Fishel	Pittsburgh
Helen Gertrude Fisher	Lewisburg
Ralph Rhinesmith Fleming	Nutley, N. J.
Charles Raymond Freeble	Watsonstown
LaRose Hyacinth Gemmill	Windsor

**Name****Address**

Geneva Beatrice Gerlach	Hazleton
Henry Anson Glover, Jr.	Nichols, N. Y.
Olga Amalie Goerdel	Mifflinburg
Robert Russell Gray	Bradenville
Miriam Herr Haldeman	Malvern
Walter James Hall	Shamokin
Lois Hall Hamblin	Lewisburg
Thomas Michael Hammond	Reynoldsville
Levi Francis Hartman	Williamsport
Robert Christian Heim	Lewisburg
Robert Frank Heiser	Mahanoy City
Ida Roberta Heller	Williamsport
John Jacob Hellewell	Philipsburg
Floyd Grove Hempt	New Cumberland
Herbert William Henning	Dunkirk, N. Y.
Anna Stewart Heysham	Norristown
Earl Wilson Hill	Lewisburg
Stephen Andrew Hodoba	Mt. Carmel
James Jones Holsing	Canonsburg
Henry Walter Holter	Howard
Elliott Stephens Hopley	Bartley, N. J.
Thomas Ignatius Horan	Locust Gap
Mildred Elizabeth Houseman	Altoona
Robert Ogilvie Hudson	Lansdale
Carolyn Julia Hunt	Lewisburg
Clinton Brown Hyatt	Loganton
Charles Grover Hyman	Winfield
Effie Claire Ireland	Jeannette
Foster Duncan Jemison	Princeton, N. J.
Donald Miles Johnson	Lewisburg
Evan Malbone Johnson, Jr.	Lewisburg
Ruth Irene Johnson	Lewisburg
Thomas William Jones	Plymouth
William Lambert Joseph	Youngwood
Donald Bruce Keim	Danville
Clyde Ernest Kelly	Scottdale
Adelaide Louise King	Plainfield, N. J.
Eleanor Grant Kingsbury	Holyoke, Mass.
Peter Francis Kinyoun	Penn Yan, N. Y.
Albert McKinley Kisbaugh	Nesquehoning
George Dewey Knight	Cogan Station

Name	Address
John Koblish	Plymouth
John Carlisle Koch	Harrisburg
Russell Maurice Kostenbauder	Aristes
James Hard Landau	Sunbury
Mary Catherine Lape	Johnstown
Raymond Hilding Larson	Port Allegany
Gordon Merrill Lenox	Coraopolis
John Eustace Lenox	Coraopolis
Geddy Gilbert Lesaius	Inkerman
Charles Frederick Lindig	Lewisburg
Robert Leland Livingston	Jersey Shore
Mary Taylor Llewellyn	Avoca
William John Llewellyn	Wilkes-barre
Helen Elizabeth Lockard	Johnstown
George Walter Long	Ardmore
Curtis Milton Lowry	Uniondale
William Meredith Lybarger	Mifflinburg
Ransom George Lyons	Opp
Robert William Machamer	Lewisburg
Galen Stuart McInroy	Middlebury Center
Arthur John McMurtrie	Muncy
Maggie Martin	Pittston
Mario Valentine Martin	Coudersport
Florence Margaret Martz	Washingtonville
Mildred Megahan	Williamsport
John Harold Melhuish	Kingston
Wayne Samuel Mengel	Shamokin
Elizabeth Middleton	Camden, N. J.
Oliver Nelson Miller, Jr.	Allentown
Elizabeth Voris Moore	Watsonstown
David Wendell Morgan	Franklin
Charles Archibald Munro	Rossiter
Lawrence Emery Murray	Reynoldsville
Henry Benjamin Mussina	Williamsport
Malcolm Vivian Mussina	Williamsport
Randall LaMar Newell	Canton
Harry Virgil Overdorff	Johnstown
Earl Emery Owens	Hemlock, N. Y.
Nicholas Palma	Paterson, N. J.
Henry Mark Parmley	Mahanoy City
James Nelson Patterson	Onnalinda

Name	Address
Mary Ruth Peck	Pittsburgh
Mary Elizabeth Peifer	Wilkes-Barre
Amos Vastine Persing, Jr.	Allenwood
Grayce Esther Peterson	Monessen
Ruth Porter	Oil City
Ruth Dorothea Raker	Allentown
Mary Elizabeth Rakestraw	Williamsport
Karen Narholm Rasmussen	Perth Amboy, N. J.
Gerald Mark Rassweiler	Lewisburg
William Daniel Reitz	Lewisburg
Ralph Wallace Richards	Philadelphia
Edwin David Robb	Howard
Henry Tracy Rockwell	Monroeton
Sidney George Rosenbloom	Austin
Sara Alice Ruhl	Lewisburg
Albert Raphael Sandoval	Caracas, Venezuela
Jefferson Verne Sangston	McClellandtown
Harold Luther Schaefer	Cogan Station
Charles Luther Schulz	Pottstown
Clarence Merrill Shaffer	Latrobe
Myrtle Gertrude Sharp	Flemington, N. J.
Luella Frank Shortess	Montandon
Jerome Francis Skehan	Pardus
Margaret Jean Smith	Paterson, N. J.
Louis Walter Sobray	Mt. Pleasant
Oliver Thomas Somerville	Rutherford, N. J.
Edwin Clifford Soultz	Great Bend, N. Y.
Lester Clearman Stanton	Waymart
Rachel Marie Steckel	Slatington
Margaret Bower Steely	Lewisburg
Mary Anne Fulton Stephens	Johnstown
Percy Kenneth Steventon	Nesquehoning
Mary Pauline Stocker	Milton
Alice Eleanor Stokes	Montgomery
Alfred Gordon Stoughton	Jeannette
Evelyn Kedzie Strauser	Williamsport
Elma Virginia Streeter	Williamsport
Milton Jones Stringer	Philadelphia
Florence Beatrice Supplee	Northbrook
Paul Rufus Sweitzer	Plymouth
Stephen Terpak	Simpson



Name	Address
Milton Edgar Trainer	Paulsboro, N. J.
Archibald Myglis Van Blarcom	Paterson, N. J.
Daniel Maneval Villinger	Williamsport
Elizabeth Margaret Wagner	Smithton
Elizabeth Sanford Walker	Farmingdale, N. J.
Paul Newton Walker	Verona
Prudence Lunetta Walters	Lewisburg
Martha Winifred Watkins	W. Pittston
James Harold Watson	Atlantic City, N. J.
Mary Elizabeth Weeter	New Bloomfield
Ruth Hamilton Weidenhamer	Lewisburg
Evelyn Mae Weidensaul	Lewisburg
Jessie Read Wendell	Philadelphia
Frank John Widemire	Bradford
Ebenezer David Williams	Nanticoke
Edwin Witman Williams	Williamsport
Merritt Bingham Wilson	Mount Holly, N. J.
James Marsena Wood	Wilkinsburg
Wendell Holmes Woodside	Clearfield
Elizabeth Wurtenberg	Towanda
Robert John Young	Snow Shoe
Albert Gould Zimmerman	Pittston
Fred Thomas Zimmerman	Shamokin

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## SOPHOMORES: CLASS OF 1925

Name	Address
Margaret Dorothy Ackerman	Erie
Morris Seiler Ames	Watsonstown
Eunice Elvira Anderson	Lewisburg
Frank Eldon Baker	Wellsboro
Leslie Earl Baker	Espy
Louise Esther Barnes	Ashland
Catherine Simpson Baxter	Allenwood
Hulda Jeanette Baxter	Downsville, N. Y.
Mary Louise Baxter	Downsville, N. Y.
George Hodge Beale	Oakmont
Albert Addison Behling	Pitman, N. J.
Henry Wilkens Bergh	New York, N. Y.
Dorothy Naomi Follmer Berkheimer	Watsonstown
Mildred Pearl Biddison	Malvern

Name	Address
Joseph Karl Bird	Clearfield
Robert Charles Bixler	Hanover
Charles Beckwith Boone	Harrisburg
Charlotte Evans Bosler	Johnstown
Robert Greenleaf Brandt	Pittsburgh
Mary Phoebe Bray	Freeland
Elinor LaRue Breisch	Harrisburg
Warren Franklin Breisch	Catawissa
Joshua Alexander Breisch	Philadelphia
John Paul Bressler	Donaldson
Myron Antony Brognard	Manasquan, N. J.
Carolyn Elizabeth Brown	Derry
Frank Henry Brown	Brookville
Leon Clayton Bubeck	Schuylkill Haven
John Buchovecky	Johnstown
Clifton Leon Buckley	West Chester
Max William Bussom	Williamsport
Mark Selden Butler	Thompson
Antonio Canto	Merida, Yucatan, Mexico
Joseph Howard Carson	Parkesburg
William Hall Challis	Wilkes-Barre
Lawrence Rondell Cherrington	Bloomsburg
William Christian	Nanticoke
Robert John Clingerman	Pittsburgh
William Henry Colestock	Lewisburg
Wilbur Wingert Cook	Lewisburg
Elberta Stone Councilman	Harrison Valley
William Opp Courson	Wesleyville
John Fremont Cox	Munhall
Fred Wilson Cozadd	Sharon
Roland Clark Cunningham	Ocean City, N. J.
Edwin Jacob Davies	Nanticoke
Alice Vivian Davis	Olyphant
Frances Moore Davis	Lewisburg
Randall Leland Davis	Cleveland, O.
Myron Franklin Decker	Williamsport
LeRoy Shaffner DeMart	Tyrone
Roena May Dock	Lewisburg
John Richard Dowd	Honesdale
Willis Sylvester Drake	Vandergrift
William Oscar Duck	Lewisburg

Name	Address
Albert Gleaves Eastman	Wilmington, Del.
Alexander Willis Edgar	Wilkinsburg
Thomas Delbert Edgar, Jr.	Wilkinsburg
Leiser Oliver Eisenhower	Lewisburg
Earle Edward Ellis	Watsonstown
Stephen Chapman Emmanuel, Jr.	Wilkes-Barre
Donald Cameron England	Wilkinsburg
Harry Hovlacher Engle	Dalmatia
Donald Opp Eschbach	Milton
William Chester Evans	Homestead
George Richard Faint	Roselle Park, N. J.
Richard Reed Feight	Bedford
James Wallace Foster	Oakmont
Mildred Cornelia Francisco	Great Notch, N. J.
Allan Horton Frank	Sugargrove
Frank Lincoln Frost, Jr.	Columbia, S. C.
Gertrude Gardner	Carbondale
Harriet Kathryn Glase	Lewisburg
Helen Elizabeth Glass	Reading
William DeRuth Golightly	Lewisburg
Mildred Olive Good	Johnstown
Russell Benjamin Green	Sharon
Harold Israel Grice	Scranton
Philip Randall Griffin	Scranton
Ruth Irene Grove	Lewisburg
Ralph Semans Hagan	Uniontown
Elizabeth Julia Harman	Milton
Albert Henry Harris	Millville, N. J.
Elizabeth Kathryn Hartranft	Montgomery
Wildon Taylor Harvey	Coatesville
Francis Haskett	Trenton, N. J.
Colvin Hassenplug	Milton
Raymond Hearst Heiligman	Lehigh
Andrew Hendrickson	Pedricktown, N. J.
George Theodore Henggi	Oakmont
Wilbur Sterling Hennen	Fairmont, W. Va.
Donald Elder Henry	Apollo
Thomas James Henry, Jr.	Apollo
Reta Lillian Herold	Lewisburg
Theodore Heysham, Jr.	Norristown
Lillian Higgins	Flemington, N. J.

## Name

## Address

Eugene Strickland Horsman	Erie
Reuben Benjamin Houston	Apollo
Austin Lawton Huffman	East Stroudsburg
Rebekah Viola Hunter	Spring City
Stephen Campbell Husted	Williamsport
Marshall Hammond Irvin	Lewisburg
Coral Emma Jack	Wayne, N. J.
Margaret Rodgers James	Allentown
Emerson Jenkins	Scranton
Albert Williams Johnson, Jr.	Lewisburg
Allen Franklin Jones	Centralia
Frank Lydick Jones	Punxsutawney
Martha Jane Jones	Pittston
Carl Gailard Kapp	Watsonstown
Ruth Keebler	Freeport
Walter LeRoy Keyser	Montoursville
Lee Kissinger	Sunbury
Carl Henry Kivler	Nanticoke
Carroll Keiser Kline	Lewisburg
Warren Thomas Kopp	Williamsport
Lowell Edgar Krebs	Colegrove
Sarah Elizabeth Kredel	Johnstown
Joseph Laher	Everett
John Huffner Lauder	Ridgway
Jesse Laventhol	Philadelphia
Charles Hubert Leehan	Pittston
Santo Joseph Lipari	Atlantic City, N. J.
Ruth Elizabeth Lupold	Sunbury
Robert Holt McBride	Paterson, N. J.
William Charles McFarland, Jr.	Parkesburg
Anna Marian McIlnay	Watsonstown
Murdo James MacKenzie	Philadelphia
Roye Miller McLane	Lemoyne
Kenneth Earl McMurray	Wilkinsburg
William Vickers Mahaffey	Oakmont
John Bennett Marlin	DuBois
Grace Valeria Matz	Shillington
Mary Agnes Mayes	Milton
Mildred Lucile Meixell	Lewisburg
Margaret Beatrice Mettler	Elysburg
Charles Miller, Jr.	Mt. Carmel

Name	Address
Raymond Hall Miller	Salem, N. J.
Rebecca Pearl Milliken	Lewisbur
Thomas Buckworth Mills	Pittsto
Harry Theodore Moore	Reynoldsvill
Helen Elizabeth Morton	Woodcliffe, N. J.
Bernard Martin Moss	Paulsboro, N. J.
Ralph Eugene Mucher	Wiconisc
Harold Donald Murray	Altoon
Franklin Benard Myers	Pottsvill
John Edward Namisniak	Nanticok
Wilson Rittenhouse Neisser	Philadelphi
Roy Elvin Nicodemus	Bloomsbur
Wanda Coates Nicol	Archbal
Kermit Levan Noll	Zion
Henry Kohler Owen	Yorl
William Painter	Tampa, Fla
Helen Gertrude Peifer	Wilkes-Barr
Roy Peters	Lambertville, N. J.
Warren Elias Pinner	Camden, N. J.
Joseph Harlan Powell	Downington
Florence Pratt	Camden, N. J.
Clara Ellen Price	Linder
Clifford Hough Reed	Lock Haven
John Maxwell Reed	Lewisburg
Roslyn Thomas Reed	Norton, Va
William Arthur Rees	Providence, R. I.
Phoebe Margaret Reinhart	Milton
Mary Dorothy Replogle	Johnstown
Edythe Rainear Reynolds	Mt. Holly, N. J.
William Leaming Rice	Wildwood, N. J.
George Findley Riddile	Oakmont
Charles Gerald Rishell	Emporium
Lillian Alice Roberts	Germantown
Harold Franklin Roles	Juniata
Alice Evans Rossiter	Norristown
Harry Rutter	Northumberland
Vera Sackett	Downsville, N. Y.
Samuel Philip Sardo	Johnstown
Alice James Savage	Haddonfield, N. J.
Dollie Norelle Schaffner	Falls Creek
Romualdo Richard Scicchitano	Catanzaro, Italy

Name	Address
Ellen Virginia Scott	Oakbourne
Mary Eliabeth Seidel	Milton
Robert Barnes Shaffer	West Chester
Samuel James Simonton	Allentown
Herbert William Slack	Sunbury
Robert Daniel Smink	Shamokin
James Aitken Smith	Knoxville
Leonore Bentley Smith	Lewisburg
Carry Catharine Smithgall	Montoursville
Dorothy Stabler Snyder	Altoona
Johannetta Snyder	Mahanoy City
Archie Rudolph Spangler	Bradford
Clair Grove Spangler	Lewisburg
Sara Elizabeth Spotts	Milton
William Samuel Stephens	Johnstown
Walter Arthur Stevens	Friendship, N. Y.
Russell Earl Stewart	Ford City
Myrtle Louise Stickler	Hazleton
Ralph Mattern Stine	Tyrone
Martha Catherine Swartz	Lewisburg
Sylvia Eliza Tanner	Milton
Varren Edward Thamarus	Lehighton
Albert Thomas	Olyphant
Howard Fayette Clark Thomas	Lewisburg
Villiam George Thomas, Jr.	Nanticoke
Villiam Espy Thompson, Jr.	Philadelphia
Frank Sankey Turner	Munhall
Imee Angella Unverzagt	Harrisburg
Esther Elizabeth Vonada	Lewisburg
Herbert Carl Wagner	Lewisburg
Howard Watson Wagner	Waymart
Frank Edwin Waldner	Ashland
Mildred Frances Walker	Farmingdale, N. J.
John Arthur Walter	Claysburg
Sara Dudley Walton	Moorestown, N. J.
Joseph Thomas Washleski	Shamokin
George Samuel Weber	Mount Ranier, Md.
Melrose Edmund Weed	Reynoldsville
Elen Weidenhamer	Milton
Robert Allen West, Jr.	Ashley
James Joseph Whalen	Milton



Name	Address
Charles Frederick White	Olyphant
Theodore Addison White	Warren
Wilfred Whitman Wilcox	Knoxville
Edward Gilbert Williams	Milton
Harry Williams	Nanticoke
Charles Pennock Williamson	West Chester
Anthony Karl Wilsbach	Harrisburg
Carl Kline Wolfe	Allentown
Harry Ricker Wolfersberger	Campbelltown
Robert Thomas Woodings	Oakmont
Paul Jennings Woodring	Reynoldsville
Ronald Baker Yothers	Pitcairn

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### FRESHMEN: CLASS OF 1926

Name	Address
Everett James Alexander	Red Bank, N. J.
Robert Herschel Allison	South Brownsville
Theodore Fairbanks Angus	Conemaugh
Darthea Grace Ash	Haddonfield, N. J.
Paul Ridington Austin	Phoenixville
Walter Stanley Austin	Philadelphia
Merrille Wilson Badman	Houtzdale
Floyd Jay Bailey	Nicholson
Guy Wesley Bailey	Nicholson
Abraham Louis Bailine	Atlantic City, N. J.
Eleanor Longdon Bair	Oakmont
Charles BaThein	Rangoon, Burma
Wayne Lamotte Battin, Jr.	West Chester
Daniel Cobb Beckley	Mifflinburg
Ruby Irene Bell	Nanticoke
Reuben Beshansky	Johnstown
Beulah Belle Bierbach	Wickliffe, O.
Allan Elmer Billman	Mt. Carmel
Harry Field Bird	New Albany
Robert Alexander Black	Harrisburg
Norman Luther Bloemer	Salem, N. J.
John William Boggs	Milton
Lelia Emma Bower	Williamsport
Stewart Ferdinand Brewen	Ashland
Anna Lutz Brown	Pitman, N. J.

Name	Address
James Walter Brown	Lewisburg
William Harold Browne	Burnside
John DeWitt Budd	Budd Lake, N. J.
Edgar Houseman Butler	Clearfield
Rolland McCurley Campbell	Allenwood
Josiah DuBois Carll	Salem, N. J.
Eugene Debs Carstater	Mill Hall
Robert Morgan Cartwright	Ridgway
Malcolm Angstadt Clinger	Milton
Leonard James Coates	Allentown, N. J.
Marian Gertrude Coe	Factoryville
Carlton George Coleman	Hancock's Bridge, N. J.
Raymond Jerome Conter	Pennsville, N. J.
Grace Cutting Cooley	Lewisburg
Arland Fred Cooper	Knoxville
Elizabeth Bruce Cooper	Philadelphia
Peter James Corish	Newberry
James Lemoyne Cornely	Madera
Theron Austin Cramer	Shamokin
Charles Bradford Crane	Millbury, Mass.
Juanita Curtis	Waymart
Louise Gladys Curtis	Waymart
Raymond Gilbert Daggs	Coraopolis
Frederic Bard Davies	Scranton
John Norman Davies	Wilkesburg
Morgan Samuel Davies	Reading
James Courtney Denton	Rochester
Glenn Walter Diehl	Mt. Carmel
Adelbert Walter Doe	Millbury, Mass.
Albert Sherden Drake	Vandergrift
Charles Harold Drum	Syracuse, N. Y.
Thomas Burns Drum	Lewisburg
Charles Elgin Dunmire	Duquesne
Rolland Nelson Dutton	Buffalo, N. Y.
Asa Tingley Eaton	Harrisburg
Vera Lorraine Eister	Hamburg, N. J.
William Alonzo Ent	Northumberland
Frederick William Evans	Kingston
Helen Gladys Everitt	Lewisburg
Hampton Carson Eyster	Cynwyd
James Michael Leon Fallon	Danville

Name	Address
Helen Mary Falstick	Clearfield
Charles Taylor Farrow, Jr.	Haddonfield, N. J.
Ruth Davis Fetzner	West Milton
John Warren Fisher	Tamaqua
Annetta Grace Florena	Jeannette
Harold Louis Fortner	Port Allegany
George Gordon Foshay	New Haven, Conn.
Herbert Winslow Foshay	New Haven, Conn.
Frederick Jenkins Foster	Carbondale
Catharine Susan Frederick	Harrisburg
Gilbert Ray Frith	South Williamsport
George Henry Fritzinger	Mauch Chunk
Carlton LeRoy Gardner	Harrisburg
Kenneth Earl Gardner	Juniata
Robert Young Garrett, Jr.	Haddonfield, N. J.
Anna Mary Gettys	Derry
Martin Goodman	Altoona
Elizabeth Young Griffith	Scranton
John Owen Griffiths	Girardville
Goldena Sweet Guilford	Farmingdale, N. J.
William Spencer Gurnee	Hawthorne, N. J.
Leo Thomas Hadsall	Tunkhannock
William Ross Hagerman	Malaga, N. J.
Eugene Edward Halleran	Sea Isle City, N. J.
Clarissa Wardwell Hamblin	Lewisburg
James Harold Hand, Jr.	Cape May, N. J.
Orval Johnson Hand	Montour Falls, N. Y.
Thomas Duffield Hann, Jr.	South Brownsville
Christine Nellie Hardy	Greenwich, Conn.
Mary Jefferies Harrar	Camden, N. J.
Mary Elizabeth Haslam	Palmerton
Leo Albert Hatch	Penn Yan, N. Y.
Edna Byrdena Healy	Kane
Rachel Eddelman Heim	Lewisburg
Edwin Sylvester Heiser, Jr.	Lewisburg
Jesse Hyle Helsel, Jr.	Hollidaysburg
Frederick Raymond Helwig	Millersburg
Gilbert Aloysius Heyl	Pittsburgh
George Llewellyn Hickok	Troy
Arthur Franklin Hirt	Altoona
Louis Milton Holland	Hollidaysburg

Name	Address
Kenneth Waite Horsman	Erie
Richard Lloyd Horter	Philadelphia
John Taylor Howard, 2nd	Emporium
John Frederick Williams Howell	Atlantic Highlands, N. J.
Edward Jackson Humphreys	Reading
Clarence Applebee Hurst	Norristown
George Hurteau, Jr.	Emporium
Henry Ferdinand Jaworski	Paterson, N. J.
Cyrus LeRoy Johnson	Lewisburg
James Reuben Johnson	Lewisburg
Edward Emlyn Jones	Scranton
Burfryn Jones	Nanticoke
Stanley Gaylord Jones	Throop
Samuel Horton Jones	Woodstown, N. J.
Thomas Bellis Kantz	Burnside
Donald Heller Kaupp	Williamsport
Susan Elizabeth Kennedy	Muncy
Robert James Kennerdell	Cleveland, O.
Winifred Corbin King	Altoona
Eleanor Kitlowski	Nanticoke
Grace Elizabeth Klapp	Watsonstown
Kathleen Winifred Kleckner	Mifflinburg
Mary Evelyne Klepper	Montoursville
Dorothy Sarah Klotz	Moorestown, N. J.
Norman Ray Knauer	Alliance, O.
Edward Alford Knorr	Haddonfield, N. J.
Clarence John Koch	Tamaqua
Charles Raymond Koppenhaver	Lykens
Anthony Joseph Kostos	Mt. Carmel
John Kraus	New York, N. Y.
William Henry Kredel	Johnstown
Clyde George Learn	Salamanca, N. Y.
Benjamin Franklin Lewis	Nanticoke
LaRue Lieb	Williamsport
Dorothy Locke	Camden, N. J.
Gilbert Anthony Long	Millersburg
Herbert David Luce	Monessen
Ambrose Victor Lupcho	Nanticoke
Vincent Fabian Lupco	Nanticoke
Joseph Wilson McCormick, Jr.	Bridgeton, N. J.
Bruce Arthur McHail	Bolivar

Name	Address
William Porter McNutt	Wickhaven
David Davis Malick	Morea
Ruth Burdette Mandeville	Caldwell, N. J.
Charlotte Fowler Mansell	Sound Beach, Conn.
Ethel Hazel Marks	Westwood, N. J.
Harold Cuthbert Marshall	South Brownsville
Mildred Lillian Marshall	Washington, D. C.
James Vandine Martz	Sunbury
William Alan Mathewson	Windber
George Andrew Mattson	Camden, N. J.
James Thomas Meckley	Conemaugh
Mary Hull Menges	Montgomery
Lewis Douglas Meredith	Factoryville
Richard Treat Merwin	New Haven, Conn.
Hannah Metcalfe	Hunlock Creek
Thomas Jefferson Miers	Dallas
Howard Clarence Miles	West Chester
Carolyn Emma Miller	Mifflinburg
David Lewis Miller	Juniata
Dorothy Mae Miller	Lock Haven
John Burdick Miller	Coudersport
Katheryne Elizabeth Miller	Montgomery
Ruth Logar Miller	Bradford
Pauline Esther Milliken	Silver City, N. M.
Andrew Brown Montgomery	West Newton
Wayne McVey Moore	Vandergrift
George Warren Morgan	Pottsville
Isabelle Coopey Morrison	Nanticoke
Glen Boyd Morrow	Lewisburg
Martha Maurine Morrow	Camptown
Arlan Paul Mosser	Shillington
Ralph Harold Mott	Mahaffey
Kenneth Thompson Murphey	Parkesburg
Francis C. Murray	Reynoldsville
Ralph Mussina	Milton
Rene Noel Nameche	Ford City
Robert Nathans	Brooklyn, N. Y.
Paul Lester Nieman	Wilkes-Barre
Nathaniel Reynolds Packard	Atlantic City, N. J.
Harold Gold Painter	Lewisburg
Alexander Matier Palmer	Oakmont

Name	Address
John Nyce Patterson	Watson town
Martha Marion Perry	Lewisburg
Charles Soloman Pomerantz	Atlantic City, N. J.
Paul Gardnier Potter	Coudersport
Herbert James Preece	Nanticoke
Margaret Marion Price	Williamsport
Ruth Marion Propert	Philadelphia
Alfred Thornton Purks	Drexel Hill
Rachael Dorothy Quintin	Honesdale
John Drone Ramsey	Penn Yan, N. Y.
Stewart Leeds Rankin	Reading
George Brittain Reed	Montoursville
Robert Buren Reed	Norton, Va.
Sara Mae Reed	Lewisburg
James Smith Replogle	Johnstown
Walter Albert Reuter	Pittsburgh
Leon Harry Richman	Philadelphia
Donald Liggett Rigg	Pottstown
Chester Alan Rishell	Erie
Gladys Irene Roberts	Germantown
William Hamilton Rodgers, Jr.	Allentown
George Welliver Rogers	Reading
Charles Almon Rosencrans	Cleveland, O.
William Barrett Rupp	Lewisburg
Maria Allen Salisbury	Swedesboro, N. J.
Mary Gwendolyn Sanders	Northumberland
Russell Edenton Sangston	McClellandtown
Edwin Forrest Saxman, Jr.	Villa Nova
Arnold Penrose Seasholtz	Northumberland
Ernest Chester Shaffer	Latrobe
John Paul Shaffer	Vandergrift
Boyd Robert Sheddan	Princeton, N. J.
Geraldine Shelow	Tyrone
Walter Stanley Shorts	Dickson City
Joseph Earl Shreve	Trenton, N. J.
Robert Charles Shultz	Sunbury
John Meason Shultzabarger	South Fork
Gertrude Samantha Sibel	Ligonier
Andrew James Silenskey	Madera
Kenneth Wilson Slifer	Woodbury, N. J.
Ida Preston Sloan	Lewisburg
Charles Raymond Milton Sloat	Hartford, Conn.



Name	Address
Stanley Yale Slocum	Carbondale
Carrie Mae Smith	Lewisburg
Elizabeth Alice Smith	Lansford
Frank David Smith	Worcester, N. Y.
Isabelle Mareca Smith	Philadelphia
Lois Myrtella Smith	Milton
Robert Hughes Smith	Knoxville
Robert Frederick Snodgrass	Muncy
Charles Robert Snyder	Montandon
Russell Edward Snyder	Trafford
Vera Mae Spencer	DuBois
Harry Arthur Spranca	Wall
Charles Harmon Springer	South Brownsville
Mary Elizabeth Stahl	Lewisburg
Thelma Sara Stamm	Milton
John Theodore Starrett	Hartford, Conn.
John Edwin Stealy	Lewisburg
Anna Overholt Stephens	Mooresburg
Edward Lamont Stewart	Montgomery
Allan Weisel Tarr	Princeton, N. J.
Floyd Homer Taylor	Alliance, O.
Rollin Harmon Taylor	Wilburton
Samuel Vanderburg Tench, Jr.	Wilkes-Barre
Elizabeth Evans Thompson	Pitman, N. J.
Norman Holmes Thorn	Plainfield, N. J.
Gordon Throne	Montgomery
Willard Hiram Tice	Quakertown
David Louis Trax	Warren
Florence Rebecca Utt	Bloomsburg
Anna Margaret VanDine	Hazelton
Reeves Bailey Van Duzer	Glenwood, N. J.
William Clair Vickroy	Windber
William Frank Wagner	Smithton
Ralph Lincoln Walter	Mt. Carmel
Michael Emil Wanchisin	Nanticoke
Emerson Edward Ware	Glassboro, N. J.
Silas Nathan Weisner	Glassboro, N. J.
Clifford Wester	Kittanning
Malcolm Wells Wheeler	Carbondale
William Rafford White	Coudersport
Enoch Charles Willman	Mt. Carmel

Name	Address
William Lester Winstanley	Trenton, N. J.
Harold Lamont Winters	Williamsport
Adam Follmer Yerg	Milton
Kathryn Elizabeth Zierdt	Hazleton
Robert Kolp Zortman	Lewisburg
Virginia Kolp Zortman	Lewisburg

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### SPECIAL STUDENTS

Name	Address
Elsie Laura Bowser	Lewisburg
Richard Philip Custer	Johnstown
Mary Hester Humphrey	Pittsburgh
Abigail Eldridge Johnson	Lewisburg
Shige Sarah Kobayashi	Tokio, Japan
Grace Elizabeth Lavo	South Williamsport
Arlene Winifred Potter	Milton
Helen Marie Powell	Bivalve, N. J.
Warren Seebold Reed	Lewisburg
Elizabeth Avis Speakman	Williamsport
Miriam Harp Stanger	Glassboro, N. J.
Frank Edwin Taylor	Bellefonte
Helen Eva Waldner	Ashland

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### SUMMARY OF COLLEGE STUDENTS

Graduate Students .....	9
Seniors .....	170
Juniors .....	203
Sophomores .....	231
Freshmen .....	278
Special Students .....	13
Total .....	904

## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

By States			
Connecticut	7	Clinton	5
Delaware	2	Columbia	11
District of Columbia	2	Crawford	1
Florida	1	Cumberland	3
Indiana	1	Dauphin	18
Maryland	1	Delaware	2
Massachusetts	3	Elk	3
New Jersey	106	Erie	5
New York	27	Fayette	11
Ohio	6	Indiana	1
Pennsylvania	735	Jefferson	11
Rhode Island	1	Lackawanna	25
South Carolina	1	Lancaster	1
Texas	1	Lebanon	3
Virginia	2	Lehigh	7
West Virginia	2	Luzerne	62
		Lycoming	60
		McKean	8
		Mercer	2
		Monroe	1
		Montgomery	13
		Montour	5
		Northumberland	75
		Perry	1
		Philadelphia	24
		Potter	7
		Schuylkill	16
		Somerset	2
		Susquehanna	4
		Tioga	6
		Union	101
		Venango	4
		Warren	3
		Washington	2
		Wayne	9
		Westmoreland	29
		Wyoming	9
		York	5
		Total	735
		Final Total	904
Total			
	898		
By Foreign Countries			
Burma	1		
Colombia	1		
Italy	1		
Japan	1		
Mexico	1		
Venezuela	1		
Total	6		
By Counties in Pennsylvania			
Allegheny	43		
Armstrong	10		
Beaver	1		
Bedford	2		
Berks	17		
Blair	20		
Bradford	7		
Bucks	2		
Cambria	25		
Cameron	3		
Carbon	10		
Center	8		
Chester	18		
Clearfield	14		

# ALUMNI ORGANIZATIONS

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## GENERAL ALUMNI ASSOCIATION

President, Carl C. Law, Esq., '85

325 South Graham St., Pittsburgh  
Lewisburg

Secretary, Leo L. Rockwell, '07,

## THE ALUMNI CLUB OF PHILADELPHIA

President, Dr. Samuel Bolton, '85

4701 Leiper St.

Secretary, Louis W. Robey, Esq., '04

918 Stephen Girard Bldg.

## THE ALUMNI CLUB OF NEW YORK CITY

President, C. M. Konkle, '01, 48 Hawthorne Ave., East Orange, N. J.

Secretary, W. W. Pangburn, '10, 192 Joralemon St., Belleville, N. J.

## THE ALUMNI CLUB OF PITTSBURGH

President, C. D. Loveland, '11

2541 Oliver Bldg.

Secretary, Helge Florin, '09

387 Union Arcade

## THE ALUMNI CLUB OF CHICAGO

President, W. C. MacNaul, '90

6510 Ellis Ave.

Secretary, G. T. Keech, '15

4019 Sheridan Road

## THE ALUMNI CLUB OF NORTHEASTERN PENNSYLVANIA

President, James P. Harris, Esq., '12

609 Coal Exchange Bldg., Wilkes-Barre

Secretary, Sidney Grabowski, Esq., '14, 417 Connell Bldg., Scranton

## THE ALUMNI CLUB OF HARRISBURG

President, J. A. Tyson, '11

Kunkle Bldg.

Secretary, W. C. Sprout, '08

% The Patriot, Harrisburg

## THE ALUMNI CLUB OF WILLIAMSPORT

President, Oliver J. Decker, Esq., '99

Trust Bldg.

Secretary, Anne Galbraith, '07

965 High St.

## THE ALUMNI CLUB OF LEWISBURG

President, Leroy T. Butler, '97

Lewisburg

Secretary, Claire G. Groover, '15

Lewisburg

## THE ALUMNI CLUB OF CALIFORNIA

President, Allan G. Ritter, Esq., '09

1012 Black Bldg., Los Angeles

Secretary, Roy J. Farr, Esq., '08,

716 Ferguson Bldg., Los Angeles

## THE ALUMNI CLUB OF CHINA

President, Charles Way Harvey, '00      20 Museum Road, Shanghai  
 Secretary, Rev. Lewis C. Hylbert, '05      Ningpo

## THE CLEVELAND ALUMNI CLUB

President, Ralph W. Snow, '94      1024 B. of L. E. Bldg.  
 Secretary, Helen Moyle Bailey, '20      1920 E. 84th St.

## MIFFLIN-JUNIATA ALUMNI CLUB

President, Hiram N. Wolfe, '11      Lewistown  
 Secretary, Catherine G. Thompson, '19      Reedsville

## BERKS COUNTY ALUMNI CLUB

President, Dayton L. Ranck, '16      % Narrow Fabric Co., Reading  
 Secretary, Mary Stanton Speicher, '07      1050 Madison Ave., Reading

## THE ALUMNI CLUB OF YOUNGSTOWN, OHIO

President, Charles Koonce, Jr., '90      1209 Wick Bldg.  
 Secretary, Ruth Cooper, '19      25 W. Evergreen Ave.

## THE ALUMNI CLUB OF TRENTON

President, J. Warren Davis, '96      P. O. Bldg.  
 Secretary, Emma E. Dillon, '15      2000 Nottingham Way, R.D. 2

## THE GENERAL ALUMNAE ASSOCIATION

President, Mrs. Helen Houghton Zeller, Inst. '03      Lewisburg  
 Secretary, Mrs. Nellie Follmer Everett, Inst. '12      Lewisburg

## THE PITTSBURGH ALUMNAE CLUB

President, Mrs. John B. Dumont, Jr., Inst. '00      312 Frederick Ave., Sewickley  
 Secretary, Bina Carr      5511 Howe St.

## THE PHILADELPHIA ALUMNAE CLUB

President, Mrs. Romain C. Hassrick      4518 Chestnut St.  
 Secretary, Carrie McCaskie Wise, '06      23 Mill Road, Ashbourne

## THE LEWISBURG ALUMNAE CLUB

President, Miss Carrie Foresman, '16      Lewisburg  
 Secretary, Mrs. Fanny Getz Brown, Mus., '06      Lewisburg



## THE ALUMNI ASSOCIATION

The General Alumni Association is the official organization of the Alumni to advance the interests of the University. It is incorporated. All former students of the college are members, but only those who have paid the life membership fee or the annual dues are eligible to vote or to hold office.

The officers are a President, a Secretary, and a Treasurer. The Alumni Council is composed of one representative each from the various local clubs. The Board of Managers is the Board of Directors of the corporation. It is elected by the Alumni Council.

The annual membership fee, including subscription to the Alumni Monthly, is \$2.50. The life membership fee, including life subscription to the Alumni Monthly, is \$25. The Alumni Monthly subscription to those who are life members under the old \$5 and \$10 plans, is \$1.50. Checks in payment of dues should be made out to Frank M. Simpson, Treasurer of the Association.

## THE ALUMNI OFFICE

The Alumni Office in Main College is in charge of the Alumni Secretary. The Alumni Records are kept here. They include the Addressograph geographical files, the card class and alphabetical files, and miscellaneous files of various kinds. The Alumni Office appreciates prompt notice of address changes on the part of Alumni. A beginning has been made of a collection of historical material dealing with the University. This includes old issues of The College Herald, The Bucknell Mirror, L'Agenda, the Orange and Blue, pictures of historical interest, books and clippings, and the like. Gifts to this collection will be gladly received.

The Alumni Monthly, published monthly from October to June, aims to keep the Alumni informed of the progress of the University, of the activities of the Alumni, and so far as possible of undergraduate activities. It serves also as a clearing house of Alumni opinion on topics of general interest to friends of the University.





Bucknell University

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The School of Music



# THE SCHOOL OF MUSIC

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## FACULTY

PAUL GEORGE STOLZ, A.M.

Director, Science of Music, Voice

(Bucknell University School of Music, Dr. Elysée Aviragnet, A.M.;  
Dr. Hugh Schussler, New York; Emrich and Soehnlín,  
Berlin)

CHARLOTTE GUION ARMSTRONG

Violin, History and Appreciation of Music, Orchestration

(Wyoming Seminary; New England Conservatory of Music;  
Ovide Musin, Liege)

ANNA MARTHA PINES

Supervisors' Course

(Bucknell University School of Music; Comb's Conservatory,  
Philadelphia; Cornell University, Ithaca, N. Y.)

DAVID EARL MOYER

Piano

(Alberta Jonas, Berlin; Ernst von Dohnanyi, Berlin; Royal Academy,  
Berlin.)

KATHERINE BERGSTRESSER

Piano

(Bucknell University School of Music; Peabody Conservatory of  
Music, George Boyle; Wilson College, Chambersburg).

JANET S. MENCH

Pipe Organ

(Bucknell University School of Music; Dr. Fred Wolle)

HELEN ELIZABETH SWARTZ, A.B.

Piano, Harmony

(Bucknell University; Wellesley College; Clarence G. Hamilton;  
Hamilton C. Macdougall)

ADRIAN WYNNOBEL

Voice

(Pursued studies with teachers in The Hague and New York City.)

## MARGUERITE HARTMAN

Voice

(Bucknell University School of Music; Wilson College)

## GRACE JENKINS

(Coombs Conservatory, Philadelphia)

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HISTORICAL

Music was first taught at Bucknell University in 1853 by Melville Malcolm under the supervision of the Seminary. Various teachers had charge until 1858, when Theodore P. Held took charge with one assistant, and in 1864 he was given a second assistant. In 1865 Mr. Held's position became vacant, but he again resumed his work in 1866. In 1867 Alexander M. Loos was made Professor of Music. In 1869 Hermann F. Eberhardt took up the duties of Professor of Music and by 1870 there were sixty students enrolled in the Music Department. In 1871 a vocal teacher was added to the music faculty. In 1888 Professor Elysée Aviragnet, M.A., took charge of the Music Department. In 1892 Professor Aviragnet received the degree of Doctor of Music, after which the Music Department was known as the Bucknell University School of Music, one of the distinct schools of the University, which are one corporation and have one President, who has general charge. Paul Stolz was actively associated with Dr. Aviragnet and his work in the School of Music. He became his assistant, later Assistant Director, and at Dr. Aviragnet's death in 1908, his successor as Director of the School of Music.

## ADMISSION TO THE SCHOOL OF MUSIC

All applicants for admission should secure application blanks from the Director or Recorder.

### REQUIREMENTS

Fifteen units of secondary school work are required for admission. No student is admitted with less than thirteen units. A unit is a course of study pursued for a year, at least four periods a week of forty minutes each.

#### Elementary Musical Training

For the Supervisors' course and the course in Voice, ability to sing at sight hymns and folk tunes with a fair degree of accuracy and facility, and the possession of an acceptable singing voice and of a fairly quick sense of tone and rhythm are required.

For the course in Piano, ability to play Heller Opus 47; Bertini Opus 29; Sonatinas by Clementi, Reinecke; or Kuhlau; Bach's Little Preludes; Mozart, and Haydn, easier Sonatas, is required.

Students who do not meet the above requirements may enter the Preparatory Department.

## COURSES OF INSTRUCTION

### PIANO

#### First Year

Bach two and three part Inventions; Heller Opus 45 and 46; Czerny Opus 299; Cramer Studies; Mendelssohn's Songs without Words; Sonatas by Mozart, Beethoven, Haydn. Easy classic compositions. Preparatory octave and chord studies, scales arpeggios. Solfeggios and Dictation.

#### Second Year

Bach Suites; Czerny Opus 740; Clementi Gradus ad Parnassum; pieces by Mendelssohn, Schubert, Schumann, Chopin, Grieg and others; Beethoven, Sonatas, scales, arpeggios, thirds and octaves.

#### Third Year

Bach Well tempered Clavichord; Studies by Kessler, Henselt, Moschele, Beethoven, Sonatas; Compositions by Schumann; Chopin Preludes, Nocturnes, Polonaises, Ballades; Selections by modern composers. Harmony. History of Music.



### Fourth Year

Bach Clavichord; Arrangements of Bach's Works; Chopin Etudes; Beethoven Sonatas; Selections from Liszt, Rubinstein, Debussy, Rachmaninoff, and other modern schools. Harmony. Counterpoint and Fugue.

### Piano Sight Playing

The purpose of this course is to develop fluent reading and to broaden the students' general knowledge of musical literature.

This course is taught in classes of four (two pianos, eight hands). The students play at sight the representative classics beginning with the simple works of Haydn and Mozart and extending through the modern symphonies.

This class is open to Juniors and Seniors in Piano.

### PIPE ORGAN

#### First Year

Stainer's Organ Method. Schneider's Organ Studies. Easy Hymn Tunes. Registration. Sight Reading. Easy pieces by Batiste, Flagler, Lemaigre, etc. Solfeggios.

#### Second Year

Dudley Buck's Short Preludes and Fugues, and Pedal Phrasing. Bach Chorales. Difficult hymn tunes. Organ solos of various styles by Rheinberg, DuBois, etc.

#### Third Year

Sonatas by Merkel, Bach, and Mendelssohn. Preludes, Toccatas, Fugues. Quartet and chorus accompaniment. Selected solos by Guil-mant, Malling, etc. Harmony. History of Music.

#### Fourth Year

Sonatas by Guil-mant, Rebuke. Symphonies by Widor. Bach's Advanced Works. Chanting and solo accompaniment. Improvisation. Selected solos for concert use, by Frank, Widor, Lemare, Hollins, etc. Voice (two semesters). Harmony. Counterpoint and Fugue.

### VIOLIN

#### First Year

Scales and finger exercises, Schools and Studies by de Beriot, Dancla, Alard, Gruenberg, Sevcik, Belgian School Books I and II, Kayser Op. 20 Book I, etc. Pieces in first to third positions inclusive. Easy Sonatinas, pupils' Concertinos. Solfeggio and Dictation.

### Second Year

Belgian School III, First ten studies of Kreutzer, Scales and Arpeggi in three octaves, First half of Belgian School IV. Concertos of Acolay, Sitt, and others. Sight playing, Chamber Music practice. Solos by Leonard, de Beriot, and others. Sonatas by Corelli, Gade, etc.

### Third Year

Technical studies in all positions, complete Kreutzer, first ten studies by Fiorilla, complete Belgian School IV, Concertos of Viotti, Op. 20 & 23, Sonatas of Grieg, Handel, etc. Orchestra playing. Harmony. History of Music.

### Fourth Year

Complete Fiorilla, Caprices by Rode, Concertos of de Beriot Nos. 7 and 9, Rode No. 7, Viotti No. 22, Sonatas of Tartini and others. Solos by the best composers for the violin. Movements from Wieniawski Concertos Mendelssohn, Vieuxtemps and others. Orchestra playing of Symphonies, Overtures, etc. Harmony. Counterpoint and Fugue.

## VIOLONCELLO

### First Year

Technical exercises. Major scales in two octaves. "Method Practique," by S. Lee. Studies by Dotzauer. Easy pieces. Solfeggios.

### Second Year

Technical exercises by Cossmann. Scales in three and four octaves. Studies by Lee and Franchomme. Concertinos and pieces by Romberg.

### Third Year

Technical exercises by Fitzhagen. Advanced studies by Grutzmacher. Concertos. Harmony. History of Music. Orchestral work.

### Fourth Year

Technical exercises by Klengel and Becker. Advanced studies. Sonatas by Bach. Harmony. Counterpoint and Fugue. Orchestral work.

**CONTRABASS****First Year**

Warnecke's Method of Playing. Scales and finger exercises. Etudes. Solfeggios.

**Second Year**

Vorzuegliche Uebungen, Hause's. Etudes. Overtures. Symphonies.

**Third Year**

Warnecke's Method. Advanced Etudes. Beethoven Symphonies. Harmony. History of Music. Orchestral work.

**Fourth Year**

Warnecke's Method. Part 2. Wagner Operas. Solos by Sturm and Laska. Harmony. Counterpoint and Fugue. Orchestral work.

**VIOLA**

Bruni's Methods and Studies by Campagnoli.

**VOICE****First Year**

Breath Control. First Vocalises of Concone. Diction. Slow, easy songs. Solfeggios.

**Second Year**

Vocalises by Concone, Marchesi, Lamperti, and others. Diction. More advanced English songs. Simple Recitative. Simple Arias. Solfeggios. Piano (one lesson weekly). Chorus. Advanced Vocalises, Song Interpretations. Velocity.

**Third Year**

Advanced Vocalises. Song Interpretation. Velocity. Coloratura singing begun. Difficult Recitatives. Elaborate Arias. Solfeggios Advanced. Chorus. Harmony. History of Music.

**Fourth Year**

Complete Oratorio Rôles. Complete Opera Rôles. Preparation of Concert Programs. Chorus. Harmony. Counterpoint and Fugue.

## COURSE FOR SUPERVISORS OF MUSIC IN PUBLIC SCHOOLS

## Special Requirements in Supervisors' Course

## Voice

The voice requirement is based upon attainment rather than upon hours of study and recitation. Completion of the course requires the ability to sing rote songs (including art songs suitable for schools) with satisfactory tone quality and interpretation.

## Piano

Completion of the two year course for supervisors requires the ability to play acceptably the piano accompaniments found in standard school texts.

## FIRST YEAR

## First Semester

	Class Room Hours	Credit Hours
Sight Reading .....	5	5
Dictation .....	5	5
Introduction to Teaching .....	3	3
Elementary Theory .....	3	3
Child Voice and Rote Songs .....	2	2
Chorus, Glee Club or Orchestra .....	2	1
Voice .....	$\frac{1}{2}$	$\frac{1}{2}$
Piano .....	$\frac{1}{2}$	$\frac{1}{2}$
	Total	20

## Second Semester

Sight Reading .....	5	5
Dictation .....	5	5
Harmony .....	3	3
Psychology and Child Study .....	3	3
English Fundamentals .....	3	3
Chorus, Glee Club or Orchestra .....	2	1
Voice .....	$\frac{1}{2}$	$\frac{1}{2}$
Piano .....	$\frac{1}{2}$	$\frac{1}{2}$
	Total	21

## SECOND YEAR

## First Semester

	Class Room Hours	Credit Hours
Material and Methods—(First 6 Grades) ...	5	5
Applied Material and Methods (Conducting Routine Activities) .....	2	2
Harmony .....	3	3
Music History and Appreciation .....	3	3
Conducting .....	3	3
Care and Classification of Adolescent and Adult Voices .....	2	2
Chorus, Glee Club or Orchestra .....	2	1
Practical Teaching .....	1	1
Voice .....	$\frac{1}{2}$	$\frac{1}{2}$
Piano .....	$\frac{1}{2}$	$\frac{1}{2}$
	Total	21

## Second Semester

Material and Methods (High Schools) ....	3	3
Harmony .....	2	2
Melody .....	3	3
Practice Teaching .....	10	10
Material and Methods (Band and Orchestra)	3	3
Chorus, Glee Club or Orchestra .....	2	1
Practical Teaching .....	1	1
Counterpoint .....	3	3
Voice .....	$\frac{1}{2}$	$\frac{1}{2}$
Piano .....	$\frac{1}{2}$	$\frac{1}{2}$
	Total	27

The Practical Teaching is in public schools under the supervision of the Director of the Supervisors' Course.

## HARMONY

## FIRST YEAR

## First Semester

Musical Notation, formation of Scales, both Major and Minor, intervals, triads, and chord connection. Simple part writing from given basses and sopranos; the chords of the seventh, with exercises harmonizing in open and close positions.

Modulation. Transposition of various models in all keys. Harmonizing melodies which modulate.

**Second Semester**

Chromatically altered chords, suspension, retardation, appoggiatura, passing tone, embellishment, pedal point.

**First Semester****SECOND YEAR**

Chromatic tendency chords; classification and use of non-harmonic tunes; free diatonic harmony.

**Second Semester**

One period form; rhythm in vocal music; harmony in fewer and more than four parts.

**RECITALS**

Frequent recitals in the presence of the faculty and students of the School of Music and their friends are held to accustom students to playing in public.

On the Friday evening prior to Commencement a public recital of the School of Music is held in Bucknell Hall.

The public examination of those who desire certificates of proficiency is held in Bucknell Hall the second Saturday afternoon preceding Commencement. At this time each pupil plays or sings two pieces of high grade, and reads an essay on some subject connected with music.

**TUITION**

Tuition is charged for instruction in music, per semester, as follows:

	Full Course	Half Course	Quarter Course
<b>Vocal</b>			
Professor Stolz .....	\$100.00	\$60.00	*
Professor Wynnobel .....	75.00	40.00	*
Miss Jenkins .....	75.00	40.00	\$25.00
Miss Hartman .....	50.00	30.00	19.00
<b>Piano</b>			
Professor Moyer .....	75.00	40.00	*
Miss Bergstresser .....	75.00	40.00	25.00
Miss Swartz .....	50.00	30.00	19.00
Pipe Organ .....	75.00	40.00	25.00
Violin .....	75.00	40.00	25.00
Supervisors' Course .....	50.00	*	*
Harmony .....	15.00		
Use of Piano for practice (1 hour daily)	10.00		
History of Music .....	15.00		
Use of Pipe Organ for practice (1 hour daily) .....	20.00		

(\*) indicates that these courses are not offered.



The additional charges per semester for pupils residing in the Women's College will be as follows:

Board .....	\$ 100.00
Furnished Dormitory Room, including heat and light .....	30.00
Extra charge for rooms in Bucknell Cottage and in New Residence Hall .....	7.50
Student Budget .....	8.00

Special individual instruction in music, per lesson, \$5.00.

Full course implies two one-hour lessons per week, and theory.

Half course implies two half-hour lessons per week, and theory.

Quarter course implies one-half hour lesson per week, and theory.

No reduction is made except in case of protracted illness.

Instruction in the orchestra and in harmony is free to pupils pursuing other courses in music.

Payment is strictly in advance at the beginning of each semester.

### RESIDENCE OF MUSIC PUPILS

Women students in the Music School reside in the Women's College and are under the care of the Dean of Women. Those who wish to make music a specialty are recommended to register at the College for at least one course each semester in Language or Literature.

The regular charges for pupils in music, residing in the Women's College, are \$276 per annum. This does not include charges for instruction in music, which are determined by the number of lessons taken per week.

### GRADUATION IN MUSIC

Students who complete any of the Courses in Music and pass the examination, receive a certificate of proficiency. Students will not be taken as Fourth Year Pupils in Music until they have passed an examination before a committee consisting of members of the faculty and other appointed judges. Besides the examination before the Committee for admission to the Fourth Year, students will be required to pass a preliminary examination at the opening of the second semester, and a final examination before Commencement week. Students will not be admitted to the final examination unless they have passed the preliminary examination.

### THE AVIRAGNET PRIZE

Friends of the late Elysee Avirragnet have endowed a prize for excellence in Music. For 1922 this prize was given to Evelyn Mae Bennage.

### THE DIRECTOR'S PRIZE

The Director of the School of Music offers an annual prize for excellence in the Science of Music. For 1922 this prize was awarded to Elsie Leistner.

### VOICE PRIZE

The Director also offers an annual prize for excellence in Voice. For 1922 this prize was awarded to Ralph Franklin Hartz.

### GENERAL REGULATIONS

Young women attending the School of Music are subject to the administration and other regulations enacted by the Board of Trustees for the government of students in the Women's College and are also entitled to all the privileges of the Women's College.

## GRADUATE STUDENTS

Name	Course	Address
Helen Gertrude Fisher	Piano	Lewisburg
Claire Gift	Voice	Milton
Carolyn Julia Hunt	Voice	Lewisburg

## FOURTH YEAR

Helen Bartlow	Voice	Sunbury
Mary Marjorie Brindle	Piano, Pipe Organ, Theory	Granville
Sara Jane Burke	Voice, Supervisor, Theory	Plymouth
Pearl Marguerite Chamberlain	Voice, Supervisor, Theory	Downingtown
Pearl Spaid Custer	Voice, Supervisor	Milton
Mildred Alice Hayden	Voice, Theory	Greensburg
Lawrence Myron Kimball	Voice	Vineland, N. J.
Emma Valeria Matz	Voice, Supervisor, Piano, Theory	Shillington
Jessie W. Pangburn	Voice	Lewisburg
Helen Marie Powell	Voice, Supervisor, Piano, Pipe Organ, Theory Bivalve, N. J.	Dawson
Nina Grace Smith	Pipe Organ	Dawson
Elizabeth Avis Speakman	Voice, Pipe Organ, Theory	Williamsport
Miriam H. Stanger	Piano, Supervisor, Voice, Pipe Organ, Theory	Glassboro, N. J.
Kathyrine M. Wagner	Supervisor	Lewisburg

## THIRD YEAR

Olive Winifred Billhime	Piano, Voice, Theory	Turbotville
Elinor Breisch	Piano	Ringtown
Willis Sylvester Drake	Violin	Vandergrift
William Marvin Groce	Violin	Selinsgrove
Theodore Heysham, Jr.	Violin	Norristown
Mary Hester Humphrey	Voice, Supervisor, Theory	Pittsburgh
Eleanor Kingsbury	Voice	Holyoke, Mass.

Name	Course	Address
Geraldine G. Lagerman	Piano, Theory	New Columbia
Grace Elizabeth Lavo	Voice, Supervisor, Theory	S. Williamsport
Camilla Thompson	Piano, Voice, Super- visor, Theory	Lewisburg
Miriam Van Valzah	Piano, Voice, Theory, Supervisor	Lewisburg
Gwendolyn F. Wensel	Piano, Voice, Theory, Supervisor	Lewisburg
Mary Elizabeth Weeter	Voice	New Bloomfield

## SECOND YEAR

Marian Ayars	Piano	Millville, N. J.
Clifford BeWard	Violin	Mifflin
Cornelia Boyd	Voice	Dover, N. J.
Elizabeth Minerva Brooks	Piano	Milton
Marion Coe	Piano	Factoryville
Bertha Ella Cupp	Voice	S. Williamsport
Florence Turner Dare	Voice, Theory	Bridgeton, N. J.
Gladys Emrick	Piano	Shamokin
William R. Hagerman	Violin	Malaga, N. J.
Anna Horoschak	Voice	Perth Amboy, N. J.
Rebecca Viola Hunter	Voice	Spring City
Fern Estelle McNeal	Violin	Sunbury
Mildred Megahan	Voice	Milton
Ruth Logan Miller	Voice	Bradford
Wayne McVey Moore	Piano, Pipe Organ, Theory	Vandergrift
Katherine Owens	Voice	Lewisburg
Arlene Winifred Potter	Piano, Theory	Milton
Phoebe Margaret Reinhart	Voice	Milton
Elma Elnora Reitz	Piano, Pipe Organ, Theory	Shamokin
Meribel Ritter	Piano, Theory	Muncy
Alice Evans Rossiter	Pipe Organ	Norristown
Thelma Schuk	Piano	Lewisburg
Gertrude Samantha Sibel	Voice	Ligonier
Rachel Steckel	Voice	Slatington
Mary Stephens	Pipe Organ	Johnstown
Lida Lavinia Suender	Piano, Theory	Lewistown
Martha Catharine Swartz	Piano	Lewisburg

Name	Course	Address
Martha Geneva Thomas	Piano	Lewisburg
Helen Eva Waldner	Violin, Pipe Organ, Piano, Theory,	Ashland
Mildred Beatrice Westbrooke	Voice	Northumberland

## FIRST YEAR

Thelma O. Adams	Piano	Sunbury
Catherine Baxter	Piano	Allenwood
Louise Mary Baxter	Piano	Downsville, N. Y.
Mary Beatty	Violin	Lewisburg
Mrs. F. S. Beers	Voice	Lewisburg
Mary P. Bray	Voice	Freeland
Pearl Botts	Piano	Milton
Charles Henry Coffel, Jr.	Pipe Organ, Theory	Allentown
Richard Arthur Colestock	Violoncello	Lewisburg
Vera Lorraine Eister	Violin	Hamburg, N. J.
Hambton Carson Eyster	Piano	Cynwyd
George Richard Faint	Piano	Roselle Park, N. J.
Gertrude Gardner	Piano	Carbondale
Margaret Godcharles	Voice	Milton
Mildred Good	Voice	Johnstown
Clara May Hartmann	Voice	Watson town
Anna Stewart Heysham	Voice	Norristown
Jessie Langley	Piano	Milton
David Lewis Miller	Voice	Juniata
Pauline Milliken	Voice	Lewisburg
Ruth Raker	Voice	Allentown
Marguerite Mary Rauck	Voice	New Columbia
Edna Robinson	Piano	Milton
Elizabeth Hornby Sale	Piano	Lewisburg
George Sale	Piano	Lewisburg
Ellen Virginia Scott	Piano	Oakbourne
Geraldine Shelow	Piano	Tyrone
Miriam Stocker	Piano	Milton
Rollin Harmon Taylor	Voice	Wilburton
Elizabeth M. Wagner	Voice	Smithton
Mildred F. Walker	Piano	Farmingdale, N. J.
Isabella R. Webster	Piano	Conshohocken
Myrtle Irene Zimmerman	Violin	Lewisburg
Sara Spotts	Piano	Milton

## PREPARATORY

Name	Course	Address
Virginia Clinger	Piano	Milton
William Leighton Herbst	Piano	Milton
Eleanor Orwig Hopp	Piano	Mifflinburg
Elizabeth Keefer	Piano	Mifflinburg
Julia Agnes Kistler	Piano	Mifflinburg
Miriam Loreman	Piano	Milton
Grace Marsh	Piano	Milton
Helen Moore	Piano	Milton
Katherine Moore	Piano, Voice	Milton
Helen Shipman	Piano	Sunbury
Dorothy Elizabeth Showalter	Piano	Gleniron

## SUMMARY

Graduate Students .....	3
Fourth Year .....	14
Third Year .....	13
Second Year .....	30
First Year .....	34
Preparatory .....	11
<hr/>	
Total .....	105



## GRADUATES: CLASS of 1922

Edna Mary Baker	Piano	Lewisburg
Evelyn Mae Bennage	Piano	Milton
Ralph Hartz	Voice, Theory	Reading
Hilda Heller	Voice, Piano, Theory, Supervisor	Forest City Williamsport
Eloise Ernestine Hill	Violin	
Mary Elizabeth Kumer	Piano, Pipe Organ, Theory	Shamokin
Elsie Leistner	Violin, Pipe Organ, Theory	Erie
Frieda Leistner	Violin, Pipe Organ, Theory	Erie
Frieda Leistner	Violin, Pipe Organ, Theory	Erie
Viola Mae Showers	Voice, Piano, Supervisor	New Columbia
Frances Edsall Van Cleaf	Voice	Stockholm, N. J.
Katharine Miller Wagner	Piano, Voice	Lewisburg
Maude B. Westcott	Voice, Supervisor, Theory	Bridgeton, N. J.

## DESIRABLE GIFTS

To persons willing to make contributions for Christian education, the following are suggested:

(a) Professorships can be endowed for \$60,000 each.

(b) Fellowships can be endowed for \$10,000 each.

(c) Scholarships can be endowed by a gift of \$1,000 to \$5,000 each, the income to be given toward the expenses of the student. The income is estimated from the average income of the funds of the Institution, and is applied only in the year in which it falls due.

(d) Additions can be made to the Loan Fund which has been established. The interest from this is loaned to students, the principal being kept intact.

(e) A fund for the Retirement of Professors, who have completed the natural period of active service.

Each of these forms of beneficence will bear and perpetuate the name of the donor or of the person designated by him.

## FORMS OF BEQUEST

To persons desiring to aid in increasing the efficiency of the University in the work of preparing young men and young women for usefulness, the following forms of bequest are recommended:

### GENERAL

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of ..... Dollars for general purposes, according to the Act of Assembly, incorporating the same;

### A SPECIAL PURPOSE

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of ..... Dollars for the establishment of a professorship, fellowship, scholarship, loan fund, or retirement fund, to bear and perpetuate the name of ..... forever.

## ANNUITIES

Gifts are accepted by the University upon which it agrees to pay an annuity during the life of the donor.

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23/24

# Bucknell University Bulletin



Annual Catalogue  
1923--1924









CATALOGUE  
OF  
BUCKNELL UNIVERSITY



SEVENTY-FOURTH YEAR  
1923-1924

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Bird's Eye View of the University

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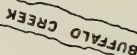
LEWISBURG, PENNA

AND

BUCKNELL UNIVERSITY

UNIVERSITY PROPERTY BOUNDARY

SCALE OF FEET



MISSISSIPPI RIVER

V.B. HALL

MISSISSIPPI RIVER

# KEY TO MAP OF LEWISBURG

## University Property

1. The President's Residence
2. Bucknell Hall
3. Bower House
4. Wolfe House
5. Women's College
8. Chemical Laboratory
9. Bucknell Recitation Hall and The First Building
10. West College
11. Main Building
12. East College
13. Carnegie Library
14. Observatory
15. Tustin Gymnasium
16. Power House
17. Foundry
18. Engineering Building
19. New Athletic Field

## Fraternities

20. Lambda Chi Alpha
21. Phi Kappa Psi
22. Sigma Alpha Epsilon
23. Kappa Sigma
24. Phi Gamma Delta
25. Sigma Chi
26. Delta Sigma

27. Kappa Delta Rho
28. Beta Kappa Psi
29. Phi Theta Sigma

## Churches

30. Evangelical
31. Baptist
32. Methodist Episcopal
33. Lutheran
34. Christian
35. Reformed
36. Presbyterian

37. Himmelmreich Library
38. Post Office
39. Union National Bank
40. Lewisburg Trust and Safe Deposit Co.
41. Lewisburg National Bank
42. Court House
43. Soldiers and Sailors Monument
44. College Inn
46. Cameron House
47. Steininger's Cafe

## Railway Stations

48. Pennsylvania R. R.
49. Reading R. R.

# GENERAL CALENDAR

1924-1925

1924

February						
S	M	T	W	T	F	S
					<b>1</b>	<b>2</b>
<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	

March						
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<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>	<b>31</b>					

April						
S	M	T	W	T	F	S
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<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>			

May						
S	M	T	W	T	F	S
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<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>

June						
S	M	T	W	T	F	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>
<b>29</b>	<b>30</b>					

September						
S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>				

October						
S	M	T	W	T	F	S
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	

November						
S	M	T	W	T	F	S
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<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>30</b>						

December						
S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>			

1925

January						
S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>

February						
S	M	T	W	T	F	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>

March						
S	M	T	W	T	F	S
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>
<b>29</b>	<b>30</b>	<b>31</b>				

April						
S	M	T	W	T	F	S
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>
<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>		

May						
S	M	T	W	T	F	S
				<b>1</b>	<b>2</b>	
<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
<b>31</b>						

June						
S	M	T	W	T	F	S
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>28</b>	<b>29</b>	<b>30</b>				

Dates printed in bold-faced type are those upon which the College is in session.

# COLLEGE CALENDAR FOR 1924-1925

## 1924

January 2 . . . . . Wednesday-12:30 P.M.-Christmas recess ends  
January 31 . . . . . Thursday-Final examinations end  
January 30-31 . . . . . Wednesday and Thursday-Enrolment of all students  
February 1 . . . . . Friday-8:00 A.M.-Second semester begins  
February 22 . . . . . Friday-Holiday  
April 16 . . . . . Wednesday-12:00 M.-Spring recess begins  
April 23 . . . . . Wednesday-12:30 P.M.-Spring recess ends  
May 30 . . . . . Friday-Holiday  
June 13 . . . . . Friday-Final examinations end  
June 15 . . . . . Sunday-Baccalaureate Sunday  
June 17 . . . . . Tuesday-Alumni Day  
June 18 . . . . . Wednesday-Annual Commencement

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July 7 . . . . . Monday-Summer Session begins  
August 15 . . . . . Friday-Summer Session ends

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September 15-16 . . . . . Monday and Tuesday-Registration of new students and enrolment of all students  
September 17 . . . . . Wednesday-8:00 A.M.-First semester begins  
November 1 . . . . . Saturday-Last day for enrolment of graduate students  
November 26 . . . . . Wednesday-12:00 M.-Thanksgiving recess begins  
November 28 . . . . . Friday-8:00 A.M.-Thanksgiving recess ends  
December 18 . . . . . Thursday-12:00 M.-Christmas recess begins

## 1925

January 6 . . . . . Tuesday-8:00 A.M.-Christmas recess ends  
January 31 . . . . . Saturday-Final examinations end  
January 30-31 . . . . . Friday and Saturday-Enrolment of all students  
February 2 . . . . . Monday-8:00 A.M.-Second semester begins  
February 23 . . . . . Monday-Holiday  
April 8 . . . . . Wednesday-12:00 M.-Spring recess begins  
April 16 . . . . . Thursday-8:00 A.M.-Spring recess ends  
May 30 . . . . . Saturday-Holiday  
June 12 . . . . . Friday-Final examinations end  
June 14 . . . . . Sunday-Baccalaureate Sunday  
June 16 . . . . . Tuesday-Alumni Day  
June 17 . . . . . Wednesday-Annual Commencement

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September 14-15 . . . . . Monday and Tuesday-Registration of new students and enrolment of all students  
September 16 . . . . . Wednesday-8:00 A.M.-First semester begins

## HISTORY

Bucknell University was founded under the name of the University at Lewisburg in 1846. In February of that year the charter was granted by the Pennsylvania Legislative Assembly and in the autumn instruction began in the basement room of the old Baptist meeting house at Lewisburg. The first president was Stephen W. Taylor, LL.D., who served during the first five years of the University's existence. In 1847 the first building on the present campus was ready for occupancy. The first class, numbering seven members, was graduated in 1851. In the same year Howard Malcolm, D.D., LL.D. became president. Dr. Malcolm served until 1857 when he was succeeded by Justin R. Loomis, Ph.D., LL.D.

In 1862 the institution closed its doors for the only time in its history. In July of that year the Confederate invasion threatened Pennsylvania, and professors and students marched off in an emergency company which played its part in checking the advance of the southern troops. They returned to their class-rooms after Lee's retreat.

In 1879 President Loomis ended his long term of office and was followed by David Jayne Hill, LL.D., the first graduate of the University to become its president. In 1886 the name of the institution was changed to Bucknell University in honor of the late William Bucknell of Philadelphia, who had served for many years as chairman of the Board of Trustees.

In 1889 John Howard Harris, Ph.D., LL.D., entered upon the presidency. His thirty-year term of office was a period of significant growth which witnessed a great increase in physical equipment and in the size of faculty and student body. The present President, Emory W. Hunt, D. D., LL.D. has served since 1919.



## CORPORATE RIGHTS

The University was incorporated with full university powers by the Legislature of Pennsylvania in an Act approved by the Governor on the fifth day of February, 1846. The management of the University is committed to a Board of Trustees that is self-perpetuating. The Charter provides: "That said trustees shall not for any cause, or under any pretext whatever encumber by mortgage, or otherwise, the real estate or any other property of said institution: That no religious sentiments are to be accounted as a disability to hinder the election of an individual to any office among the teachers of the institution, or to debar persons from admittance as students, in any department of the University".

## ORGANIZATION

The University is composed of the College and of the School of Music.

## BENEFACTORS OF BUCKNELL UNIVERSITY

The total property of the institution exceeds one million dollars. The productive endowment amounts to about six-hundred thousand dollars. All this property has been given by friends of education, numbering several thousand persons. Founders of the institution, that is, Benefactors who have given ten thousand dollars or more have been: David Jayne, John Price Crozer, William Bucknell, Samuel Alrich Crozer, Harry Samuel Hopper, Harriet Bucknell Hopper, John D. Rockefeller, Catherine A. Wentz, Charles Miller, John J. Carter, Henry Kirke Porter, David Porter Leas, Andrew Carnegie, Louise Bucknell Little, Joseph Kerr Weaver, Franklin Mathews, Charles P. Vaughan, Rush H. Kress, James S. Swartz, S. Josephine Loftus.

Patrons (those who have given one thousand dollars or more, but less than ten thousand) have been: Charles F. Ab-



bott, Ralph A. Amerman, E. A. Armstrong, Francis W. Ayer, Benjamin Bear, William P. Beaver, Martin Bell, Roy G. Bostwick, Emma W. Bucknell, Washington Butcher, Simon Cameron, Levi B. Christ, Harold N. Cole, Elisha A. Coray, William J. Coxey, Nettie Dunham Crary, Samuel J. Cresswell, George K. Crozer, J. Lewis Crozer, Mrs. J. Lewis Crozer, Robert H. Crozer, John C. Davis, Thomas Y. England, Henry L. Fonda, Isaac Ford, Mrs. Isaac Ford, Benjamin Gartside, Mary W. Getter, Thomas A. Gill, Leroy Gleason, Calvin Green, Benjamin Griffith, Calvin A. Hare, John H. Harris, George Hyde, James Irving, Israel James, E. C. Jayne, Adam Johnston, John D. Johnson, John T. Judd, William W. Keen, William B. Leas, Charles A. Lindemann, Alexander M. Lloyd, Justin R. Loomis, Freeman Loomis, William H. Ludwig, J. C. McKinney, S. E. McVitty, Joseph Meixell, George Barron Miller, George F. Miller, James Moore, James Moore, Jr., H. J. Mulford, Jacob G. Neafie, Christian Overholt, A. C. Overholt, Maria Overholt, George Porter, Jacob Reese, Anna L. Reilly, A. J. Rowland, J. C. Sibley, George M. Spratt, Orlando W. Spratt, W. H. Starbuck, Amos B. Still, James B. Stephenson, John B. Stetson, Francis J. Torrance, Ernest L. Tustin, N. Stewart Wall, Charles S. Walton, Martha England Walton, Thomas Wattson, Samuel Wolf, Simon P. Wolvertson, S. D. Young, S. Lewis Ziegler, Oliver J. Decker, Elbridge R. Johnson, W. H. Llewellyn, E. F. L. Lotte, Christopher Mathewson.

By act of the Board of Trustees, the names of Founders and Patrons will be recorded in the annual catalogue of the University.

### A MOVEMENT TO INCREASE FUNDS

The Board of Trustees is engaged in a movement which is intended to add a million dollars to the endowment and to secure a half million for additional equipment.

## THE BOARD OF TRUSTEES

## OFFICERS

- JAMES SIMMONS SWARTZ, A.M., LL.D., Chairman  
11 Broadway, New York, N. Y.
- JOHN WARREN DAVIS, A.M., B.D., LL.D., Vice-Chairman  
P. O. Building, Trenton, N. J.
- OLIVER JOHN DECKER, A.B., Secretary  
Trust Building, Williamsport, Pa.
- JOHN THOMAS JUDD, A.M., D.D., Treasurer  
University Avenue, Lewisburg, Pa.

## MEMBERS

- |  |                 |
|--|-----------------|
| RALPH ALONZO AMERMAN                     | Scranton        |
| ROY GRIER BOSTWICK, A.M., LL.B.          | Pittsburgh      |
| MILTON G. EVANS, A.M., D.D., LL.D.       | Chester         |
| EDWARD McVITTY GREENE                    | Mount Union     |
| JOHN HOWARD HARRIS, Ph.D., LL.D.,        | Lewisburg       |
| HARRY BOARDMAN HOPPER, B.S.              | Philadelphia    |
| LINCOLN HULLEY, Ph.D., Litt.D., LL.D.    | Deland, Fla.    |
| ALBERT WILLIAMS JOHNSON, A.B.            | Lewisburg       |
| RUSH HARRISON KRESS, Ph.B.               | New York, N. Y. |
| EDWARD F. L. LOTTE                       | Paterson, N. J. |
| JOHN HENRY MACALPINE                     | Pittsburgh      |
| CHARLES MILLER, A.M.                     | Franklin        |
| SPENCER KENNARD MULFORD                  | Philadelphia    |
| FRANK WILLIAM PADELFORD, D.D.            | New York, N. Y. |
| LOUIS WILLIAM ROBEY, A.B., LL.B.         | Philadelphia    |
| JOHN THOMAS SHIRLEY                      | Pittsburgh      |
| CHARLES PARKER VAUGHAN, Sc.D.            | Philadelphia    |
| JOHN HEISLEY WEAVER                      | Philadelphia    |
| RAYMOND M. WEST, A.M., D.D.              | Lewisburg       |
| CLARENCE ANDREW WEYMOUTH, Sc.B.          | Scranton        |
| SAMUEL LEWIS ZIEGLER, M.D., Sc.D., LL.D. | Philadelphia    |

## MEETINGS OF THE BOARD

The annual meeting is held in Lewisburg on Tuesday of Commencement Week.

The semi-annual meeting is held in Philadelphia at a date chosen by the Board.

## COMMITTEES OF THE BOARD

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### COMMITTEE ON INSTRUCTION

J. W. Davis, Chairman

R. A. Amerman  
R. G. Bostwick  
O. J. Decker

M. G. Evans  
R. M. West

E. W. Hunt, ex officio

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### COMMITTEE ON FINANCE

H. B. Hopper, Chairman

Lincoln Hulley  
R. H. Kress  
E. F. L. Lotte  
S. K. Mulford  
F. W. Padelford

L. W. Robey  
J. T. Shirley  
C. P. Vaughan  
J. H. Weaver

E. W. Hunt, ex officio

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### COMMITTEE ON BUILDINGS AND GROUNDS

J. T. Judd, Chairman

E. M. Greene  
A. W. Johnson

C. A. Weymouth

J. H. Macalpine  
S. L. Ziegler

E. W. Hunt, ex officio

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### COMMITTEE ON PUBLICATIONS

R. M. West, Chairman

M. G. Evans

E. M. Greene

E. W. Hunt, ex officio

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### COMMITTEE ON NOMINATIONS

J. W. Davis  
M. G. Evans

C. P. Vaughan

E. W. Hunt, ex officio

## PRESIDENTS OF THE UNIVERSITY

- 1846-1851 STEPHEN W. TAYLOR, LL.D.  
1851-1857 HOWARD MALCOLM, D.D., LL.D.  
1858-1879 JUSTIN ROLPH LOOMIS, Ph.D., LL.D.  
1879-1888 DAVID JAYNE HILL, LL.D.  
1889-1919 JOHN HOWARD HARRIS, Ph.D., LL.D.  
1919- EMORY WILLIAM HUNT, D.D., LL.D.

# BUILDINGS AND EQUIPMENT

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## THE MAIN COLLEGE

The Main College is situated on a hill one hundred feet above the Susquehanna River. It was erected in 1859. It was designed by Thomas U. Walter, LL.D., architect of the dome and wings of the Capitol at Washington, D. C. It is Grecian in style. The building has a facade of three hundred and twenty feet. The central portion is eighty feet square, and is strengthened in front by four massive columns. On the first floor are six recitation rooms. On the second floor are the Museum of Natural History and recitation rooms.

On the third floor is Commencement Hall, with a seating capacity of fifteen hundred.

The Wings on the eastern and western sides, respectively, of the Main Building, are each one hundred and twenty feet in length and four stories in height. They are used for dormitory rooms, recitation rooms, and offices. The dormitory rooms have been thoroughly modernized. The West Wing was erected in 1850; the East Wing in 1859.

## THE WEST COLLEGE

The West College was erected in 1900. It is four stories in height, and is built of brick trimmed with brownstone. It contains ninety-seven rooms. One of the rooms is a hall for the use of the Young Men's Christian Association; the others are used for dormitory rooms.

## THE EAST COLLEGE

The East College was erected in 1907. It is built of brick, trimmed with brownstone. The first floor contains the Electrical Laboratory, the Physical Laboratory and recitation rooms. The top floor is used for draughting rooms.



The other four floors contain one hundred and twelve dormitory rooms.

### THE FIRST BUILDING

The First Building on College Hill was erected in 1846. It is fifty feet in width by eighty feet in length, and three stories in height. The building will be used as a laboratory of Biology.

### BUCKNELL RECITATION HALL

The Bucknell Recitation Hall was erected in 1889. It is contiguous to the First Building and is connected with it by a covered passageway. This building contains both recitation rooms and laboratories.

### BUCKNELL HALL

Bucknell Hall was erected in 1886. It is the chapel of the College.

### THE CARNEGIE LIBRARY

The Carnegie Library was given by the Honorable Andrew Carnegie, D.C.L., in the year 1905. The building is sixty-four feet by ninety feet. It is built of brick, trimmed with brownstone. The center, thirty feet by ninety, is used as a reading room. At the height of sixteen feet there is a gallery extending around the room. The sides, each fifteen feet by ninety, are divided, on the first floor, into rooms for special collections and for offices. The second floor will be used for stack rooms. The building will accommodate about one hundred thousand volumes.

### THE OBSERVATORY

The Observatory was erected in 1887 and enlarged in 1905. It is designed for the use of students in Practical Astronomy. The equipment consists of a Clark Equatorial telescope of ten inches aperture and  $12\frac{1}{2}$  feet focal length, furnished with a position micrometer and the usual acces-



sories; a spectroscope, with prism and grating by Brashear; a three-inch prismatic transit, with a nine-wire movable micrometer, a Fauth chronograph with Bond Spring governor; a Waldo Precision clock for siderial time, with mercurial compensation, break circuiting apparatus; Daniell's battery and telegraph sounders; a Seth Thomas clock for solar time; a sextant; celestial globes and maps, and standard works on theoretical and practical Astronomy.

### THE CHEMICAL LABORATORY

The Chemical Laboratory has been greatly improved both in usefulness and appearance by an addition of forty-five feet to its length.

On the ground floor there are the chemical preparations, agricultural, metallurgical, and organic laboratories; combustion room, stock room, and a dark room.

On the first floor there are the lecture hall, at the south end of the building, with seating capacity for one hundred and ten, and two freshmen laboratories, each fitted to accommodate ninety-six students.

On the second floor there are the physical, the quantitative, the organic, and the home economics laboratories; a recitation room, balance room, library and two offices. The building is ventilated according to modern methods.

### THE ENGINEERING BUILDING

The Engineering Building, when completed, will be in the shape of a hollow square having a frontage of 192 feet and a depth of 134 feet, and containing about 58,000 square feet of floor space.

The first wing, which has been constructed, is primarily for the use of the Mechanical Engineering department.

On the first floor there are the pattern shop, machine shop, tool room, and one recitation room.

On the second floor there are two good-sized recitation rooms, two large drawing rooms, a lecture room and an office for general use of the teachers engaged in the department of Mechanical Engineering.

### THE FOUNDRY

The Foundry was erected in 1915. It is built of brick and is fitted up with appliances requisite for the courses in molding and casting.

### HEATING AND LIGHTING PLANT

The Heating and Lighting Plant was erected in 1901. From this central plant all heat, light and power used by the University are obtained.

### THE PRESIDENT'S HOUSE

At the entrance to the Campus from University Avenue is located the President's house.

### THE GROFF HOUSE

The Groff house, with the adjoining land, formerly the property of Professor George G. Groff, is now the property of the University.

### THE TUSTIN GYMNASIUM

The Tustin Gymnasium was erected in 1890. The first story is built of stone and contains an office for the director, lockers, dressing rooms, and shower baths. The second story is built of brick, rising twenty-two feet from the main floor to the roof line. At the height of twelve feet a running-track gallery, six feet wide, surrounds the room.

### THE ATHLETIC FIELD

The Athletic Field is conveniently located at the foot of "College Hill". Around the space devoted to football and baseball, runs a quarter-mile track. Close to the track

on the southern side is the Tustin Gymnasium, easily accessible to students and trainers.

### THE NEW ATHLETIC FIELD

As a result of a recent campaign, now almost completed, to secure a half million dollars, improvements in athletic facilities are now in progress, a large portion of which will be ready for use during the next school year. An extensive athletic field for the general student body is being prepared. This field will provide facilities for all kinds of outdoor sports for both men and women. On this location also a new gymnasium will be built. Southeast of this field a stadium will be constructed in 1924, capable of seating about eighteen thousand people and containing a football field, baseball diamond, and track.

### BUILDINGS OF THE WOMEN'S COLLEGE

The buildings and campus of this department are set apart for the use of women taking courses in the College and for the School of Music.

The Main Building was erected in 1857; the South Wing, in 1870. It contains an office for the Dean, a reception room, parlors, living-room, dining-hall, and dormitory rooms. On the third floor of this building is the laboratory for the department of Home Economics.

The Bucknell Cottage was erected in 1889. It stands to the southwest of the Main Building, and is connected with it by an enclosed passageway. It is used as a dormitory for women.

A new residence hall for women was erected in 1905. The gymnasium occupies the upper story of this building, and has a floor surface of over four thousand feet.

Two additional residence buildings adjoining the campus have recently been secured. Each of these accommodates about twenty college women.

The Campus of the Women's College is separated from the main college grounds by Loomis Street.

## LABORATORIES

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### The Biological Laboratories

The Biological Laboratories, located in The First Building and in Bucknell Recitation Hall, are equipped with apparatus for carrying on the work in the organic sciences. Rooms have been equipped for the various courses and are well supplied with microscopes, microtomes, incubators, and the necessary reagents. The laboratories are also supplied with collecting apparatus, books of reference and other necessary appliances. New apparatus is added as occasion demands. The work in Zoology is illustrated by marine and fresh water forms, skeletons and mounted specimens. An anatomical museum of dissections has been built up in the last few years by the department of Zoology.

The Physiological Laboratory has recently been equipped with stimulating apparatus, kymographs, heart and muscle levers, spirometers, pneumographs, ergographs and other apparatus suitable for a well-rounded laboratory course in beginning or advanced work.

Material for Human Anatomy is received from the State Anatomical Board, and each student has the opportunity to dissect the human body. The student in Microscopic Anatomy has a good supply of paraffin and celloidin blocks. The work is illustrated with microscopic slides, alcoholic material and French wax models. Each student must provide himself with dissecting instruments.

A large Bacteriology Laboratory and a room for the preparation and sterilization of media have been recently furnished. The new equipment installed in these laboratories includes: an autoclave, Arnold sterilizers, an electric instrument sterilizer, Lautenschlaeger hot air sterilizers, constant temperature water baths, constant temperature electric incubators, a high power International electric centrifuge, a shaking machine for preparation of bacterial



emulsions, a Jewell type automatic water still, blast lamps, etc. Each laboratory is supplied with running hot and cold water, and with gas and electric service.

### **The Electrical Laboratory**

The Electrical Laboratory is located on the ground floor of East College and consists of the dynamo laboratory proper, and the instrument room for the safe keeping of portable and precision apparatus. The lecture and demonstration room adjoins the laboratory. These combined rooms furnish a total floor space of approximately 2,600 square feet and contain the apparatus for the laboratory work of the various courses in electrical engineering.

The direct current apparatus includes several direct current motor equipped generating sets; shunt, compound, and series motors with prony brake for testing purposes, and numerous other special devices for engineering and commercial tests. A 25 KW engine driven direct current generator is available for power plant efficiency tests and other experimental work. This apparatus is so chosen and erected as to make a detailed study complete and convenient.

The alternating current apparatus consists of various types of single phase, two phase, and three phase generators, single and polyphase induction motors, rotary converter, synchronous motors, and all necessary measuring instruments for performing engineering and commercial tests. Apparatus used is of frequencies varying from 25 cycles to 500 cycles.

The high tension equipment includes all the transformers, most of which are of the commercial type, others are special in their design and construction, and were built by the students in the department. The equipment also includes a Tesla coil with a thirty-six inch spark. This was built by the students of the department and operates with

remarkable success. A complete oscillograph equipment with all the necessary accessories for the study of phase relations and higher harmonics in alternating current circuits forms a very valuable adjunct to the laboratory equipment.

The apparatus for the work in telegraphy and telephony comprises the essentials for simple telegraph circuits, duplex, diplex and quadruplex telegraphy including relays and repeaters. Simple magneto apparatus and several standard types of common battery apparatus are available for study in telephony.

A standard 1 KW radio set with 225-foot aerial, having a transmitting radius of 100 to 1,000 miles, depending upon conditions, furnishes an excellent equipment for students in this line of work. This is also equipped with various forms of receiving devices, and a wave meter for studying the wave lengths of distant stations.

### **The Chemical Laboratory**

The Chemical Laboratory building is used exclusively by the department of Chemistry and Chemical Engineering. It is equipped with apparatus and laboratories suitable to the courses offered.

### **The Physical Laboratory**

The Physical Laboratory occupies the entire north end and, jointly with the department of Electrical Engineering, the south end of the lowest floor of East College. The five rooms in the north end are devoted chiefly to the study of mechanics, heat, light, and sound. They are fully equipped with permanent shelves and piers for carrying delicate apparatus, and also many portable tables for general purposes. They are well lighted and supplied with water, gas, and electricity.



The equipment of the mechanics laboratory includes certified standards for measuring time, length and mass, and includes a seconds pendulum, a standard meter, cathetometers, traveling microscopes, precision balances and weights.

For the study of heat, the apparatus includes a complete set of mercury-in-glass thermometers, air thermometers, platinum resistance thermometers and auxiliary apparatus, thermo-couples, calorimeters for the determination of the heat value of solid, liquid and gaseous fuels. Several types of apparatus are available for the determination of the mechanical equivalent of heat.

The light laboratory is equipped with a large number of lenses and mirrors, spectrometers and spectroscopes, including one by Brashear fitted with a Rowland grating of 14,438 lines to the inch, and a constant deviation type by Hilger with photographic attachment. The equipment is complete for the qualitative study of the spectra of solids, liquids, and gases. Several optical benches are fitted with different types of photometers, and one precision photometer, carrying a Lummer-Brodhun screen, is mounted for the study of electric lamps.

The electrical equipment includes a large number of galvanometers of the various types; standard cells; standards of resistance, capacity and inductance; several types of the Wheatstone bridge; the Carey-Foster bridge; Kelvin double bridge; Kelvin balance; Siemens dynamometer; a large number of the Weston portable voltmeters and ammeters; several types of potentiometers from American and foreign makers. In connection with the Electrical Engineering department, much apparatus is available which is described under the equipment of that laboratory.

## Mechanical Engineering Laboratories

These laboratories are all located in the New Engineering Building.

The Automotive Laboratory is devoted to experimental work in automotive and internal-combustion engineering. It contains six engines mounted on stands, including one new sleeve valve motor and one Curtiss air plane motor. There are in addition to these mounted engines one farm tractor and two commercial automobiles, all of which are used for experimental work. It also contains an up-to-date charging board, and has facilities for building and repairing storage batteries, analyzing starting and lighting systems, and for the study of ignition equipment. Complete tool kits are furnished for all necessary work on the automobile.

The Steam Laboratory contains a high-pressure, water-tube, cross-drum Keeler boiler, equipped with all auxiliaries such as feed-water heater, feed-pump, recording water meter, oil meter, CO<sub>2</sub> recorder, draft gages, recording pressure and temperature gages and automatic regulator, so arranged as to give the greatest flexibility in testing.

The power units consist of steam engines equipped for brake tests, indicator work and valve setting; a 22 K.W. turbo-generator set, an automatically controlled air-compressor and steam driven pumps for hydraulic experiments.

The smaller apparatus includes such instruments as steam calorimeters, gage testers, thermometer testers, coal calorimeters, etc.

The Machine Shop equipment consists of a number of engine lathes, universal and plain millers, shapers, automatic threading machine, and other machines usually found in college shops.

All machines in the Pattern Shop are individually motor-driven. The equipment consists of a number of pat-

tern-maker's lathes, band saws, circular saws, cut-off saws, shaper, planer, jointer, tools and benches for each student.

The Drawing Room is equipped with individual tilting-top tables 42 inches square, and provided with individual lockers for the students' instruments. A communicating class-room provides opportunity for recitations, computing and discussions, both of a formal and an informal nature.

One room is set aside especially for the display of sectioned models of mechanical equipment, charts, manufacturers' samples and display boards of mechanical devices.

### **The Home Economics Laboratory**

The Home Economics Laboratory is located on the third floor of the Main Building at the Women's College. The cooking laboratory is equipped for twenty-four students. A dining-room and kitchen are suitably furnished and used in connection with the planning and serving of meals.

The sewing room is on the second floor of the Bucknell Cottage. It is provided with sewing machines and other necessary equipment for the teaching of sewing.

### **THE DRAWING ROOMS**

The upper floor of the East College is devoted to drawing. The rooms are lighted by sky-lights, and are fitted with locker and desk space for one hundred students. The middle room is used for the freshman drawing, the south room for sophomore drawing, the north room for senior work in the Electrical Engineering course. The advanced drawing rooms for civil and mechanical engineers are in the Engineering Building.

The drawing department is provided with a dark room for blue printing which has an electric printing machine, and is equipped for washing and drying the prints.

## THE MUSEUM

The University possesses good collections of illustrative material in Botany, Zoology, Histology, Geology and Mineralogy. Parts of these collections are kept in the laboratories and used in classroom work.

Since the erection of the Carnegie Library two large rooms in this building have been set aside as a Biological Museum. The collections of mounted birds and mammals have been transferred to these rooms. A special effort is being made to secure additions to this museum. Skeletons of vertebrates and skins of birds and mammals are especially desired.

The Geological Museum has been greatly enlarged during the past ten years, and many valuable specimens have been added.

During the past twenty-five years there has been built up a remarkable collection of Indian relics. The collection includes some of the finest specimens from the Murray Nesbit Collection, also the Gerner Collection from Muncy, Pa., besides thousands of specimens collected along the West Branch of the Susquehanna between Sunbury and Williamsport.

## THE LIBRARY

The general library contains over forty thousand volumes, besides many thousand pamphlets. A reading room is connected with the library and offers facilities for

reading, studying, and writing. During term time both are open forenoon, afternoon and evening of each day, Sundays and holidays excepted. By the kindness of the Class of 1917, the library is well lighted with electricity. Students in all departments have free access to the shelves, and may draw two books at one time and retain them for two weeks, with the privilege of one renewal, if desired. On special designation by instructors, certain books in constant use by classes are excepted from general circulation, during specified times, or during the continuance of the study.

For greater convenience of instructors and students, collections of special technical books are also kept in the laboratories of the biological, physical and organic sciences, in the Astronomical Observatory, and in specially designated classrooms.

### ART COLLECTION

An Art Collection of paintings, engravings, heliotypes, photographs, bronzes and casts of sculpture has been accumulating for some time, and is accomodated in the Carnegie Library. Recent valuable additions include the Loomis Collection, gathered in Italy by the late President Justin Rolph Loomis, LL.D., the gift of his children, Andrew Gregg Loomis, Esq., and Mrs. Carrie Loomis Owens.



Bucknell University  
The College





# THE COLLEGE

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## OFFICERS OF ADMINISTRATION

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EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
President Emeritus

ROMEYN HENRY RIVENBURG, A.M.  
Dean

ANNA ROBERTA CAREY, A.M.  
Dean of Women

CHARLES ARTHUR LINDEMANN, A.M.  
Secretary of the Faculty

THERON CLARK, A.B.  
Registrar

JOSEPH ROBERTS WOOD, D.D.  
Assistant to the President

MARY HELEN HUNT, A.B.  
Recorder and Secretary to the President

ELIZA JOHNSTON MARTIN, Sc.M.  
Librarian

MARY STONER GRETZINGER  
Assistant to the Librarian

FRANK EUGENE BURPEE, A.M.  
Superintendent of Buildings and Grounds

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## FACULTY

---

EMORY WILLIAM HUNT, D.D., LL.D.  
President

JOHN HOWARD HARRIS, Ph.D., LL.D.  
Professor of Philosophy

WILLIAM CYRUS BARTOL, A.M., Ph.D.  
Professor of Mathematics and Astronomy

FRANK ERNEST ROCKWOOD, A.M., LL.D., D.C.L.  
Professor Emeritus of the Latin Language and Literature

WILLIAM GUNDY OWENS, A.M.

Professor of Chemistry

THOMAS FRANKLIN HAMBLIN, A.M., LL.D.

New Jersey Professor of the Greek Language and Literature

EPHRAIM MARSHALL HEIM, A.M., Ph.D.

Professor of Economics and Political Science

NELSON FITHIAN DAVIS, Sc.D.

Professor of Biology

\* LLEWELLYN PHILLIPS, A.M., D.D.

John P. Crozer Professor of Education

HENRY THOMAS COLESTOCK, A.M., Ph.D.

Professor of History

CHARLES ARTHUR LINDEMANN, A.M.

Professor of Civil Engineering

FRANK MORTON SIMPSON, Sc.M.

Professor of Physics

WALTER KREMER RHODES, A.M., E.E.

Professor of Electrical Engineering

GLENN VINTON BROWN, Ph.D.

Professor of Chemical Engineering

FLOYD GEORGE BALLENTINE, Ph.D.

Professor of the Latin Language and Literature

FRANK EUGENE BURPEE, A.M.

Professor of Mechanical Engineering

MARTIN LINNAEUS DRUM, A.M.

Professor of Surveying

NORMAN HAMILTON STEWART, Ph.D.

Professor of Zoology

BENJAMIN WILLIAMS GRIFFITH, A.M.

Professor of Romance Languages

PAUL GEORGE STOLZ, A.M.

Professor of Music

ANNA ROBERTA CAREY, A.M.

Professor of Home Economics

\* LEO LAWRENCE ROCKWELL, A.M.

Professor of German and English

GEORGE BENEDICT LAWSON, A.M., D.D.

Professor of Education

JAMES PRIMROSE WHYTE, A.M.

Professor of Oral English

HARRY WOLCOTT ROBBINS, Ph.D.

John P. Crozer, Professor of English Literature

OREL SAMUEL GRONER, A.B., Sc.M.

Professor of Biological Chemistry

STANLEY POWELL DAVIES, Ph.D.

Professor of Sociology

LELAND FOSTER WOOD, Ph.D.

Professor of Religious Education

OWEN GRIFFITH GROVES, A.M.

Associate Professor of English

HARRY SCHEIDY EVERETT, Ph.D.

Associate Professor of Mathematics and Astronomy

JOHN WINTER RICE, Ph.D.

Associate Professor of Biology

WILLIAM HILLIARD SCHUYLER, Sc.M. in Ch.E.

Assistant Professor of Chemistry

GENEVIEVE BOLAND, A.M.

Assistant Professor of Romance Languages

ROY FRANCIS HOWES, A.M., LL.B.

Assistant Professor of Economics and Political Science

ARTHUR ST. CLAIR SLOAN, A.M.

Assistant Professor of Romance Languages

DAVID EARL MOYER

Assistant Professor of Music

VORIS BLAINE HALL, Sc.M. in E.E.

Instructor in Physics

VERA COBER ROCKWELL, A.B.

Instructor in Spanish

\* On leave of absence

JOHN STEINER GOLD, B.S., A.M.

Instructor in Mathematics

GEORGE ALLISON IRLAND, E.E.

Instructor in Electrical Engineering and Drawing

BENJAMIN JAMES WILSON, Sc.M. in M.E.

Instructor in Mechanical Engineering

GEORGE MERRILL KUNKEL, Sc.M. in M.E.

Instructor in Mechanical Engineering

HARRY REDCAY WARFEL, A.M.

Instructor in English

HAROLD AUGUSTUS SHAFFER, A.B., B.S. in E.E.

Instructor in Electrical Engineering and Drawing

ANNIE COCKS CLARK, Ph.B.

Instructor in Mathematics

MARION BRIGGS DAVIS, Sc.M.

Instructor in Biology

OLIVE DOUGLASS, B.S. in H.E.

Instructor in Dietetics

FRED STURGES BEERS, A.B.

Instructor in English

JENNIE DAVIS PHILLIPS, Ph.B.

Instructor in English

LILLIAN ADELIA SINDLE, B.S.

Instructor in Household Arts

EDWARD OTERO MALDONALDO

Instructor in Spanish

WELLES NORWOOD LOWRY, Sc.M. in E.E.

Instructor in Physics

REBA EVA MACKENTHUM, Sc.M.

Assistant in Biology

CLAIR WILLIAM HALLIGAN, B.S. in E.E.

Assistant in Electrical Engineering

## OTHER OFFICERS

NELSON FITHIAN DAVIS, Sc.D.

Curator of the Museum

HARRY SCHEIDY EVERETT, Ph.D.

Director of the Observatory

PAUL GEORGE STOLZ, A.M.

Director of the School of Music

CLARA GOBLE SALE

Managing Dietitian

HARRY REDCAY WARFEL, A.M.

Editor of the Alumni Monthly

HARRY ELWOOD McCORMICK

Graduate Manager of Athletics

AGNES RODMAN MACCANN

Director of Physical Education for Women

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## COMMITTEES OF THE FACULTY

## ADMISSION AND REGISTRATION

Professor Everett, Chairman

Dean Rivenburg, Professors Boland, Colestock, Davies, Groner,  
Owens, Robbins, and the Registrar, ex officio

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## ADVANCED DEGREES

Professor Davis, Chairman

Professors Ballentine, Griffith, Lindemann, Rhodes, Robbins, and  
the Registrar, ex officio

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## ADVANCED STANDING

Professor Drum, Chairman

Professors Everett, Heim, Lawson, Owens, Rice, Schuyler, and  
the Dean, ex officio

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## ATTENDANCE AND STANDING

Professor Simpson, Chairman

Professors Brown, Griffith, Groner, Heim, Lindemann, and Stewart



**CATALOGUE**

Professor Ballentine, Chairman  
Dean Rivenburg, Professors Carey, Davies, Groves, Simpson,  
Stolz, and the Registrar

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**CHAPEL**

Professor Rice, Chairman  
Mr. Hall

---

**CURRICULUM AND COURSES**

Dean Rivenburg, Chairman  
Professors Ballentine, Bartol, Burpee, Carey, Davis, Griffith,  
Howes, Lawson, and Whyte

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**HONORARY DEGREES**

Professor Hamblin, Chairman  
Dean Rivenburg, Professors Bartol and Wood

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**LIBRARY**

Professor Hamblin, Chairman  
Professors Colestock, Heim, Howes, Lawson, Rhodes, Stewart,  
and the Librarian, ex officio

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**RULES AND REGULATIONS**

Professor Lindemann, Chairman  
Professors Ballentine, Burpee, Carey, and Rice

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**SCHEDULE**

Professor Rhodes, Chairman  
Dean Rivenburg, Professors Burpee, Everett, Rice, and Schuyler

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**SCHOLARSHIPS**

The President, the Dean, and the Registrar, ex officio

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**SELECTION OF COMMENCEMENT SPEAKERS**

Dean Rivenburg, Chairman  
Professors Burpee, Carey, Davis, Robbins, and Whyte

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**STUDENT ACTIVITIES**

Professor Drum, Chairman  
Professors Carey, Davies, Groves, Rhodes, Stewart, and Wood

# ADMISSION TO THE COLLEGE

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## REQUIREMENTS FOR ADMISSION

Graduates of approved four year secondary schools who present satisfactory evidence of having completed fifteen units of secondary school work, as specified below, will be admitted to the College on certificate. A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. According to the established usage of colleges, four years' work in English is counted as three units.

Qualified students who are not graduates of approved four year secondary schools may be admitted by passing the examinations of the College Entrance Examination Board or of the College in the units specified.

## FOR THE BACHELOR OF ARTS DEGREE

Required	Units
English .....	3
Algebra .....	1
Plane Geometry .....	1
History .....	1
Science .....	1
*Foreign Language .....	

At least three units in one language or  
two units each in two languages

The remaining four or five units may be chosen from the subjects in the appended list of electives.

\* In 1924-1925 two units in one foreign language will be accepted for entrance to the Bachelor of Arts course as heretofore. In 1925-1926 the new requirement will go into effect.

## FOR THE BACHELOR OF SCIENCE DEGREE

Required		Units
English .....		3
Algebra .....		1
Plane Geometry .....		1
Solid Geometry .....		1½
(Solid Geometry is not required for admission to the Home Economics Course)		
History .....		1
Science .....		1
Foreign Language .....	At least	two units in one language

The remaining five and one-half units may be chosen from the subjects in the following list of electives:

## Electives

		Units			Units
English		3	Modern History		1
Latin	2, 3 or 4		American History		1
Greek	2 or 3		American History and		
French	2 or 3		Civil Government		1
German	2 or 3		Civics	½ or 1	
Spanish	2 or 3		Problems of		
Elementary			Democracy	½ or 1	
Algebra	1, 1½ or 2		Economics	½	
Plane Geometry		1	Sociology	½	
Solid Geometry		½	Biology		1
Trigonometry		½	Botany	½ or 1	
Advanced Algebra		½	Zoology	½ or 1	
General Mathematics		1	Physical Geography	½ or 1	
Ancient History		1	General Science	½ or 1	
Early European History		1	Chemistry		1
English History		1	Physics		1
Medieval & Modern History		1	Mechanical Drawing	½ or 1	
			Manual Training	½ or 1	

Commercial subjects—not more than one unit to be chosen from the following: Bookkeeping, Commercial Arithmetic, Commercial Geography, Commercial Law, Stenography.

A second unit may in exceptional cases be allowed with the approval of the Committee on Admission.

### **Certificates**

All applicants for admission should secure certificate blanks from the Registrar. These blanks should be filled out by the principal of the preparatory school and returned by him to the Registrar as soon as possible after the close of the school year.

### **Entrance Examinations**

Examinations for those who do not present approved certificates and who have not taken the examinations of the College Entrance Examination Board will be held in Lewisburg on June 19, 20, and 21, and on September 11, 12, and 13. Further information regarding entrance examinations may be obtained by writing to the Registrar of the University.

### **Advanced Standing**

Applications for admission to advanced standing should be made to the Dean of the University who, in concert with the Committee on Advanced Standing, will evaluate credentials and scholastic credits, and make decision as to admission of the student. Such applications should be accompanied by

1. A letter of honorable dismissal from the institution last attended.
2. An official and detailed statement showing attendance, subjects, hours, and grades for all work accepted for admission at that institution and for the work completed there.

All students admitted to advanced standing will be regarded as on probation for the first semester. In case they do creditable work, they will then be listed as regular students with definite standing and be given advantage of credits for previous work.

No student will be admitted to the College as a candidate for a degree in the undergraduate courses after the beginning of the senior year.

A normal school graduate, who is also a graduate of a four year high school, may be given credit for not more than one year of college work toward the Bachelor of Arts degree, or not more than two years of college work toward the Bachelor of Education degree.

### Special Requirement in English

Attention is called to the following regulation concerning English:

Students will be registered for the regular freshman rhetoric course only conditionally. Those found by a practical test in the writing of simple English to be notably deficient in spelling, punctuation, grammar and paragraphing will be assigned to a special sub-freshman course. For this work no college credit will be allowed. Students who show satisfactory improvement will be allowed to begin the regular composition course in February.



# GRADUATION FROM THE COLLEGE

## Degrees

The College offers courses leading to the degrees of Bachelor of Arts, Bachelor of Science, and, beginning with the year 1924-1925, Bachelor of Education.\*

### Requirements for the Degree of Bachelor of Arts

#### I. Prescribed Work

Candidates for the degree of Bachelor of Arts must complete the following courses:

	Credit Hours
English .....	12
Foreign Language .....	9
Fundamentals .....	1
Mathematics .....	6
Orientation .....	1
Philosophy .....	9
Science .....	6
Economics, History, Political Science, Religious Education, Sociology ...	15

By a credit hour is meant one class hour a week throughout a semester; two or three hours of laboratory work a week may be required for one credit hour. As a rule, a student may expect to spend three hours of time (including the class hour) for one hour of credit.

#### II. Majors and Minors

Subjects are arranged according to the following groups and divisions:

Group I	Group II	Group III
English	Economics	Biology
French	History	Chemistry
German	Political Science	Physics
Greek	Sociology	
Latin		
Spanish		

\* Information concerning the course which leads to the degree of Bachelor of Education may be obtained by writing to the Registrar of the University.



Group IV  
Mathematics

Group V  
Education  
Music  
Philosophy  
Psychology  
Religious Education

All students who are candidates for the degree of Bachelor of Arts are required to take a major and two minors. A major consists of twenty-four semester hours in one division of a group; a minor consists of twelve semester hours in one division of a group. In any division in which enough hours to complete a major or a minor are not offered the remaining hours may be taken in related subjects approved by the professor or professors in charge.

One of the two minors must be outside of the group from which the major is chosen; the other minor may be in the same group as the major, and may lie partly in the same division of that group. No course may be counted both for a major and a minor.

The choice of the major and minors must be registered before or during the second semester of the sophomore year and with the advice and approval of the Dean and of the professor or professors in charge.

The following courses may not be offered toward either a major or a minor: Chemistry 9, 10; English 1, 2, 41, 42; French 1, 2; German 1, 2; Latin 1, 2, 3, 4; Mathematics 1, 2, 6; Spanish 1, 2.

### III. Credits

Each candidate for the degree of Bachelor of Arts is required to complete at least one hundred and twenty-eight credit hours, not including physical education.

### IV. Regulations

1. Sixteen credit hours are required in each semester. A student who has obtained an average of 85 in a semester may take more than sixteen hours in the following semester.

No student may register for more than nineteen hours in a semester.

2. A total of four years' work (including preparatory work) in foreign language is required for graduation. Even if four years of foreign language are accepted for entrance, a minimum of one year will be required in college. A student who begins a foreign language in college must pursue it for at least two years.

3. Ancient Civilization is prescribed for all students who do not pursue an ancient language.

4. The young women are required to take Physical Education in the freshman, sophomore, and junior years.

## V. Conspectus of the Course Leading to the Degree of Bachelor of Arts

### FRESHMAN YEAR

Cr. stands for credit hours.

First Semester	Cr.	Second Semester	Cr.
<b>Prescribed:</b>		<b>Prescribed:</b>	
*English 1	3	*English 2	3
Fundamentals	1	Mathematics 2 or 16 or 18	2
Mathematics 1	4	Orientation	1
History 1 or Political		History 2 or Political	
Science 17 or Religious		Science 18 or Religious	
Education 1 or Sociol-		Education 2 or Sociol-	
ogy 1	3	ogy 2	3
<b>Electives:</b>		<b>Electives:</b>	
*English 41	5	Biology 16 (Personal and	
French	3	School Hygiene)	2
German	3	*English 42	5
Greek	3	French	3
Latin	3	German	3
Public Speaking	2	Greek	3
Science		Latin	3
Biology 25	5	Mathematics 4	3
Chemistry 9	3	Public Speaking	2
Physics	3	Science	
Spanish	3	Biology 26	5
	—	Chemistry 10	3
		Physics	3
		Spanish	3
<b>Total</b>	<b>16</b>	<b>Total</b>	<b>16</b>

\* English 41-42 may be substituted for English 1-2 by students who intend to major in English.

# SOPHOMORE YEAR

First Semester	Cr.	Second Semester	Cr.
Prescribed:		Prescribed:	
English	3	**English	3
Electives:		Electives:	
Economics 1	2	Economics 2	2
Economics 3	3	Economics 4	3
Education 1, 3	3	Education 2, 4	3
French	3	French	3
German	3	German	3
Greek	3	Greek	3
Greek 9 (Greek Civiliza- tion)	3	Greek 10	3
History	2 or 3	Greek 12	2
Latin	3	History	2 or 3
Mathematics 5, 11	3	Latin	3
Political Science 17	3	Latin 10 (Roman Civiliza- tion)	3
Public Speaking	2	Logic	3
Religious Education	3	Mathematics 10	
Science		Mathematics 12, 14	3
Biology 1	5	Political Science 18	3
Biology 25	5	Public Speaking	2
Chemistry	3	Religious Education	3
Physics	3	Science	
Sociology	3	Biology 2	5
Spanish	3	Biology 26	5
		Chemistry	3
		Physics	3
		Sociology	3
		Spanish	3
Total	16	Total	16

# JUNIOR YEAR

	Cr.
Philosophy 1, 6, 8	9
Major, Minors, Electives	23
Total	32

# SENIOR YEAR

	Cr.
Major, Minors, Electives	32
Total	32

# Requirements for the Degree of Bachelor of Science

The degree of Bachelor of Science is conferred on a candidate who has completed the course in one of the following technical departments: Biology, Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, and Home Economics. The designation of the de-

\*\* Not required of students who have taken English 41-42.

gree is Bachelor of Science in Biology, in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Mechanical Engineering, in Home Economics.

### Electives

In the choice of electives the regulations pertaining to the choice of electives for the degree of Bachelor of Arts apply, as far as may be necessary, to the choice of electives for the degree of Bachelor of Science.

## Conspectus of Courses Leading to the Degree of Bachelor of Science

Cl. stands for class-room hours

L. stands for laboratory hours

Cr. stands for credit hours

### BIOLOGY

#### FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 5	3	4	5	Chemistry 6	3	4	5
English 1	3		3	English 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Drawing 1		4	2	Drawing 2		4	2
Modern Language	3		3	Modern Language	3		3
Total			18	Total			18

#### SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 25	3	4	5	Biology 26	3	4	5
Chemistry 21	2	4	4	Chemistry 22	2	4	4
English 45	3		3	Biology 14	3	4	5
Biology 17	1		1	Biology 18	1		1
Biology 1	3	4	5	Biology 2	3	4	5
Total			18	Total			20

## JUNIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Biology 7	3 4 5	Biology 8	3 4 5
Physics 1	3     3	Physics 2	3     3
Physics 13	4 2	Physics 14	4 2
Philosophy 1	4     4	Biology 24	2     2
Electives		Electives	
Biology 3	4 2	Biology 6	1 4 3
Biology 31	3     3	Philosophy 8	3     3
Biology 15	3 4 5	Biology 4	4 2
Biology 9	1 4 3	Biology 28	3 4 5
Chemistry 15	5	English Literature	3     3
Modern Language	3     3	Modern Language	3     3
		Biology 10	1 4 3
		Chemistry 32	4
Total	<hr/> 18	Total	<hr/> 18

## SENIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Biology 19	3 4 5	Biology 32	3     3
Biology 29	3 4 5	Electives:	
Electives:		Biology 12	1 4 3
Biology 27	3     3	Biology 22	3 4 5
Biology 9	1 4 3	Biology 30	3 4 5
Other electives from the		Chemistry 32	4
Junior and Senior elec-		Other electives from the	
tives of the A. B.		Junior and Senior elec-	
Course		tives of the A. B.	
		Course	
Total	<hr/> 18	Total	<hr/> 18

## CHEMICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 3	3 4 5	Chemistry 4	3 4 5
Drawing 1	4 2	Drawing 2	4 2
English 1	3     3	English 2	3     3
Fundamentals 1	1     1	German	3     3
German	3     3	Mathematics 2	2     2
Mathematics 1	4     4	Mathematics 4	3     3
Public Speaking	2     2	Public Speaking	2     2
Total	<hr/> 20	Total	<hr/> 20



. . SOPHOMORE YEAR . .

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 17	3 8 5	Chemistry 18	3 8 5
Chemistry 13	2 2	Mathematics 8	1 1
Mathematics 7	1 1	Mathematics 12	3 3
Mathematics 11	3 3	Mechanical Engineer- ing 16	4 2
Mechanical Engineer- ing 15	4 2	Physics 4	3 3
Physics 3	3 3	Physics 14	4 2
Physics 13	4 2	Elective	2
<hr/>		<hr/>	
Total	18	Total	18

JUNIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 33	1 1	Chemistry 34	1 1
Chemistry 19	3 4 5	Chemistry 20	3 4 5
Civil Engineering 13	2 2	Civil Engineering 14	1 1
Physics 5	2 6 5	Physics 6	2 6 5
Electives:	5	Electives:	6
Drawing		Drawing	
Economics		Economics	
Engineering		Engineering	
		Mathematics	
<hr/>		<hr/>	
Total	18	Total	18

SENIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 25	2 2	Chemistry 26	2 2
Chemistry 27	8 3	Chemistry 28	8 3
Chemistry 29	3 4 5	Chemistry 30	3 4 5
Electives:	7	Civil Engineering 6	1 1
Biology		Electives:	7
Economics		Biology	
Engineering		Economics	
		English	
		Engineering	
<hr/>		<hr/>	
Total	18	Total	18



## CIVIL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 1	3 4 5	Chemistry 2	3 4 5
Drawing 1	4 2	Drawing 2	4 2
English 1	3 3	English 2	3 3
Fundamentals 1	1 1	Mathematics 2	2 2
Mathematics 1	4 4	Mathematics 4	3 3
Modern Language	3 3	Mechanical Engineer- ing 14	4 2
		Modern Language	3 3
	—		—
Total	18	Total	20

## SOPHOMORE YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Chemistry 13	2 2	Drawing 4	4 2
Drawing 3	4 2	Mathematics 8	1 1
Mathematics 7	1 1	Mathematics 12	3 3
Mathematics 11	3 3	Modern Language	3 3
Mechanical Engineer- ing 17	4 2	Surveying 2	2 2
Modern Language	3 3	Surveying 4	10 5
Surveying 1	10 5	Elective	3 3
	—		—
Total	18	Total	19

## JUNIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Civil Engineering 1	1 1	Civil Engineering 10	2 2
Civil Engineering 9	1 1	Civil Engineering 12	2 2
Civil Engineering 11	1 1	Civil Engineering 14	1 1
Civil Engineering 13	2 2	Civil Engineering 16	3 3
Electrical Engineer- ing 3	3 3	Mathematics 24	3 3
Physics 3	3 3	Mechanical Engineer- ing 2	3 2 4
Physics 13	4 2	Physics 4	3 3
Surveying 5	6 3	Physics 14	4 2
	—		—
Total	16	Total	20

SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 3	5		5	Biology 28	3	4	5
Civil Engineering 7	3		3	Civil Engineering 4	5		5
Electrical Engineering 1	3	4	5	Civil Engineering 6	1		1
Physics 5	2	6	5	Electrical Engineer- ing 2	3	4	5
				English 6	3		3
<hr/>				<hr/>			
Total			18	Total			19

ELECTRICAL ENGINEERING

FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English 1	3		3	English 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineer- ing 14		4	2
				Modern Language	3		3
<hr/>				<hr/>			
Total			18	Total			20

SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 13	2		2	Drawing 4		4	2
Drawing 3		4	2	Economics	3		3
Mathematics 7	1		1	Mathematics 8	1		1
Mathematics 11	3		3	Mathematics 12	3		3
Mechanical Engineer- ing 17		4	2	Mechanical Engineer- ing 18		4	2
Modern Language	3		3	Modern Language	3		3
Physics 3	3		3	Physics 4	3		3
Physics 13		4	2	Physics 14		4	2
<hr/>				<hr/>			
Total			18	Total			19

JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Civil Engineering 13	2		2	Civil Engineering 14	1		1
Drawing 5	1	2	2	Drawing 6	1	2	2
Electrical Engineer- ing 1	3	4	5	Electrical Engineer- ing 2	3	4	5
Electrical Engineer- ing 3	3		3	Mechanical Engineer- ing 2	3	2	4
Physics 5	2	6	5	Physics 6	2	6	5
Elective	2		2	Elective	2		2
<hr/>				<hr/>			
Total			19	Total			19

## SENIOR YEAR

First Semester	Cl. L. Cr.		Second Semester	Cl. L. Cr.	
Civil Engineering 3	3	3	Civil Engineering 6	1	1
Civil Engineering 7	3	3	Civil Engineering 16	3	3
Electrical Engineer- ing 5	3	3	Electrical Engineer- ing 6	3	3
Electrical Engineer- ing 7	3	3	Electrical Engineer- ing 10	3	3
Electrical Engineer- ing 9	3	2 4	Electrical Engineer- ing 12	3	3
Elective	2	2	Electives:		3
			English 6		
			Mathematics 26		
			Surveying 6		
<b>Total</b>		<b>18</b>	<b>Total</b>		<b>16</b>

## MECHANICAL ENGINEERING

## FRESHMAN YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 1	3	4	5	Chemistry 2	3	4	5
Drawing 1		4	2	Drawing 2		4	2
English 1	3		3	English 2	3		3
Fundamentals 1	1		1	Mathematics 2	2		2
Mathematics 1	4		4	Mathematics 4	3		3
Modern Language	3		3	Mechanical Engineer- ing 15		4	2
				Modern Language	3		3
<b>Total</b>			<b>18</b>	<b>Total</b>			<b>20</b>

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Chemistry 13	2		2	Drawing 4	4		2
Drawing 3		4	2	Mathematics 8	1		1
Mathematics 7	1		1	Mathematics 12	3		3
Mathematics 11	3		3	Mechanical Engineer- ing 18		4	2
Mechanical Engineer- ing 17		4	2	Modern Language	3		3
Modern Language	3		3	Physics 4	3		3
Physics 3	3		3	Physics 14		4	2
Physics 13		4	2	Elective			3
<b>Total</b>			<b>18</b>	<b>Total</b>			<b>19</b>

JUNIOR YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl. L. Cr.
Civil Engineering 13	2 2	Civil Engineering 14	1 1
Drawing 5	1 2 2	Drawing 6	1 2 2
Electrical Engineer- ing 1	3 4 5	Electrical Engineer- ing 2	3 4 5
Mechanical Engineer- ing 7	6 3	Mechanical Engineer- ing 2	3 2 4
Mechanical Engineer- ing 11	1 1	Physics 6	2 6 5
Physics 5	2 6 5	Elective	2
Total	18	Total	19

SENIOR YEAR

First Semester	Cl.L. Cr.	Second Semester	Cl. L. Cr.
Civil Engineering 3	3 3	Civil Engineering 6	1 1
Civil Engineering 7	3 3	Electrical Engineer- ing 10	3 3
Electrical Engineer- ing 7	3 3	Electrical Engineer- ing 12	3 3
Mechanical Engineer- ing 3	2 4 4	Mechanical Engineer- ing 6	2 4 4
Mechanical Engineer- ing 5	2 2 3	Mechanical Engineer- ing 8	2 4 4
Mechanical Engineer- ing 9	4 2	Electives:	3
		Mathematics 26	
		Surveying 6	
Total	18	Total	18

HOME ECONOMICS

FRESHMAN YEAR

First Semester	Cl. L. Cr.	Second Semester	Cl.L. Cr.
Chemistry 7	3 4 5	Chemistry 8	3 4 5
English 1	3 3	English 2	3 3
Foreign Language	3 3	Foreign Language	3 3
Fundamentals 1	1 1	Home Economics 2	2 1
Mathematics 1	4 4	Mathematics 2	2 2
Home Economics 1	2 1	Sociology 2	3
Physical Education	2	Physical Education	2
Total	17	Total	17

## SOPHOMORE YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 13	3	4	5	Biology 14	3	4	5
Chemistry 23			3	Chemistry 24			3
English 45	3		3	Foreign Language	3		3
Foreign Language	3		3	Home Economics 4		2	1
Home Economics 3	1		1	Home Economics 12	1		1
Home Economics 11	3		3	Home Economics 14	1	4	3
Physical Education		2		Physical Education		2	
Total			18	Total			16

## JUNIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
History 1	3		3	History 2	3		3
Home Economics 5		2	1	Home Economics 6		2	1
Home Economics 7	1	4	3	Home Economics 8	1	4	3
Home Economics 13			2	Home Economics 16	3	2	4
Home Economics 15			3	Home Economics 24	3		3
Home Economics 23	3		3	Physics 2	2		2
Physics 1	2		2	Physics 12		2	1
Physics 11		2	1	Physical Education		2	
Physical Education		2					
Total			18	Total			17

## SENIOR YEAR

First Semester	Cl.	L.	Cr.	Second Semester	Cl.	L.	Cr.
Biology 21	3	4	5	Home Economics 10	1	4	3
Home Economics 9	1	4	3	Home Economics 22	4		4
Home Economics 17	3		3	Home Economics 18 or 1	1	2	2
Electives from the Junior and Senior A. B. Course.				Home Economics 20	3	2	4
				Electives from the Junior and Senior A. B. Course.			
Total			16	Total			16

Education 3, 6, and 11 are suggested for those preparing to teach



## REQUIREMENTS FOR ADVANCED DEGREES

The degrees of Master of Arts and Master of Science will be conferred upon Bachelors of Arts or of Science who shall have completed with a grade not lower than "B" thirty semester hours of resident work of an advanced nature, of which a major of at least eighteen hours must be in one department. All courses must have the approval of the head of the department in which the major is chosen and of the Committee on Advanced Degrees. No credit will be given for work done in another institution which has already been counted toward a degree.

All graduate students must enroll with the Registrar before November 1st of the college year.

In the Master of Science diplomas, the special field in which the work is done will be designated when recommended by the head of the department in which the major is chosen.

The degrees of Civil Engineer, Electrical Engineer, Mechanical Engineer, and Chemical Engineer will be conferred only upon persons who have proved their ability to plan and direct professional work or original work in applied science. The candidate must have received a Bachelor's degree from Bucknell University at least five years before registration for the advanced degree, and must have practiced his profession successfully for a similar period, during at least one year of which he must have had responsible charge of work as principal or assistant. When a candidate registers, he must present a detailed account of his professional experience, which must be approved by the Committee on Advanced Degrees in consultation with the professor in charge of the department in which he registers. Candidates must also present a satisfactory thesis or an approved equivalent of the same, which shall give evidence of their fitness to receive the degree sought. This thesis may not be a mere description of engineering work of a usual character, nor a



digest of existing literature, but shall describe or contain some distinct contribution to the engineering profession.

Membership of an approved grade in the principal engineering or technical societies may be considered sufficient evidence of a candidate's fitness to receive an engineering degree.

# COURSES OF INSTRUCTION

The term hour, unless otherwise specified, signifies credit hour. The odd numbers indicate first semester courses.

## BIOLOGY

Professors Davis and Stewart, Associate Professor Rice, Mrs. Davis, and Miss Mackenthum

**1. Zoology.** Lectures, text-books, and laboratory work. The fundamental principles of Biology are presented and illustrated by direct and comparative study of the lower forms of life, beginning with the Protozoa. Attention is paid to the structure, development, relationships, behavior, and economic value of a wide series of organisms. Sophomores. First semester. Five hours.

**2. Zoology.** The second semester continues the comparative study of animals by dissection of the higher forms, including mammals. Sophomores. Second semester. Five hours.

Prerequisite: Course 1.

**3. Ornithology.** A study of living birds in the field. The student learns the terms used in describing birds by the use of text-books, bird skins, and mounted specimens. The course considers such subjects as the finding and naming, distribution, migration, voice, nesting, plumage, food, and general activities of birds. The student is taught how to make bird skins. Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2.

**4. Ornithology.** The course continues the work of the first semester. Juniors. Second semester. Two hours.

**6. Entomology.** Recitations and laboratory work. In this course each student makes a thorough study of the dissection, life history, and habits of insects representative of the different orders. Special attention is given to the economical importance and relation of insects to agriculture. Juniors. Second semester. Two hours.

Prerequisite: Course 1.

**7. Microscopic Anatomy.** Lectures, text-books, and laboratory work. The first semester's work covers the embryology of representative forms; as, the chick and pig. The methods employed in the laboratory give the student much practice in fixing, dehydrating, embedding, and sectioning tissues. Juniors. First semester. Five hours.

Prerequisite: One year each of Zoology and Descriptive Chemistry.

**8. Microscopic Anatomy.** The second semester covers the histology of the human body and is illustrated by the preparation of a large series of microscopic slides by each student. Juniors. Second semester. Five hours.

Prerequisite: Course 7.

**9. Osteology.** Lectures covering the development of the skeletal system. Laboratory work on the human skeleton articulated and disarticulated; the gross structure of bones; the preparation and comparative study of skeletons of other vertebrates. Juniors and Seniors. First semester. Three hours.

Prerequisite: Courses 1 and 2.

**10. Human Anatomy.** Dissection and quizzes on the parts dissected. Each student is assigned to the dissection of one quarter of the human cadaver. This course is designed to instruct the student in the general method of dissection in the relation of the structures in the body, and to present a general idea of regional anatomy. Models and text-books are used as guides. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Courses 1, 2, and 9.

**12. Human Anatomy.** A course similar to the preceding. The student is assigned to the part of the cadaver which he has not previously dissected. This course in Human Anatomy, following the preceding one, affords the student an opportunity to make a dissection of the entire human body. Seniors. Second semester. Three hours.

Prerequisite: Course 10.

**13. Biology, Domestic Science.** This course is designed to present the fundamental properties of living matter. The structure, form, and life habits of one-celled and multi-cellular plants and

animals are studied. The inter-relation of the animal and plant kingdoms is presented. Simple problems in evolution and heredity are discussed.

The work consists of lectures, quizzes, and a personal study by the student of a designated text in Biology. Four hours a week are devoted to laboratory exercises on living and preserved material. Each student has the use of a compound microscope, and is instructed in its care and use. Sophomores. First semester. Five hours.

**14. Human Physiology.** The aim of this course is to acquaint the student with the general principles of Physiology, including a brief survey of the structure of the human body, motion, the central nervous system, organs of special sense, respiration, circulation, digestion, secretion, and excretion.

The work consists of lectures, demonstrations, and a personal study by the student of a designated text-book in Physiology. Each student spends four hours a week in the laboratory performing practical experiments in Physiology. Sophomores. Second semester. Five hours.

**15. Human Physiology, Advanced.** A more detailed study of the action of motor and nerve tissue is made in this course than in the preceding one. Likewise more advanced work is presented on blood and circulation, external and internal respiration, regulation of body heat, chemical coordination, digestion, and absorption.

The course consists of lectures and demonstrations. Each student spends four hours a week in the laboratory and has the use of all essential apparatus needed to experiment with freshly prepared material. Considerable time is spent on the physiological chemistry of blood, milk, foods, and urine. Juniors. First semester. Five hours.

**Prerequisite:** One year each of college Zoology, Chemistry, Physics, and Course 14.

**16. Personal and School Hygiene.** Lectures and recitations on the care of the skin, the teeth, and the tonsils. Hygiene of the digestive system. Foods—how and what to eat. Hygiene of the muscular system,—the place and function of setting-up exercises, calisthenics, and drills. Hygiene of the respiratory system,—breathing, seasonal ventilation of public and private buildings. Sex hygiene,—the nature, prevalence, and prophylaxis of social diseases. Mental hygiene,—the influence of mind over body, bodily postures. Freshmen. Second semester. Two hours.

**17 and 18. Scientific German or French.** The reading of foreign biological literature. Sophomores. First and second semesters. One hour each semester.

**Prerequisite:** One year of German or French.

**19. Bacteriology.** By the method of recitations, lectures, and laboratory work, the student is given the fundamentals in microbiology. The laboratory work includes the making of culture media, methods of sterilization, isolation of bacteria in pure cultures, staining of films, the examination of bacteria, and the measuring of micro-organisms under the microscope; a study of bacteria in milk, drinking water, and sewage. Seniors. First semester. Five hours.

**Prerequisite:** One year of Zoology or Biology, and six hours of Chemistry.

**21. Bacteriology, Domestic Science.** This course is similar to the preceding one. Stress is placed upon the relation of bacteria yeasts, and molds to the preparation and preservation of foods. The bacteriological problems of personal and public hygiene and sanitation are included. Seniors. First semester. Five hours.

**Prerequisite:** One year of Zoology or Biology, and one year of Chemistry.

**22. Bacteriology, Advanced.** This course is designed to be a continuation of either of the preceding courses in Bacteriology. The characteristics of the various groups of pathogenic bacteria are presented in lectures and readings from standard text-books on Bacteriology and monographs. The laboratory work includes the cultural characteristics of the various pathogenic groups, quantitative and qualitative bacteriological analysis of milk and water, culturing of naso-pharyngeal swabs, and some of the more simple serological reactions, such as agglutination, precipitation, etc. Seniors. Second semester. Five hours.

**Prerequisite:** Courses 19 and 24.

**24. Sanitary Science.** A lecture course setting forth the relation of proper sanitation to disease, the history of epidemics, the nature and value of vaccination, and other factors controlling infection and resistance. Juniors. Second semester. Two hours.

**25. Botany.** Recitations, lectures and field work. This is a general course including the anatomy of the representative types



and their relation to the environment; a study is made of the local flora. The laboratory work and lectures develop the subject from the evolutionary standpoint. Sophomores. First semester. Five hours.

**26. Botany.** This course continues the work of the first semester. Field work to show the winter conditions of trees and shrubs. Systematic Botany. Use of manuals such as Gray's and Britton's and Brown's. Sophomores. Second semester. Five hours.

Prerequisite: Course 25.

**27. Genetics.** The lectures and reports deal with the facts and problems of variation and heredity, especially their application to mankind. Text-books by such authors as Walter, Castle, and Conklin. Seniors. First semester. Three hours.

**28. Forestry.** This course covers the factors that control and regulate the development of forests. In the laboratory and in field work the students are taught to identify the trees. Seniors. Second semester. Five hours.

**29. Geology and Mineralogy.** Recitations, lectures, and laboratory work. A general course intended to give the leading facts and principles of Geology and the more important events in the geological history of the earth. The development of the North American continent is studied in detail. The laboratory work includes determinative Mineralogy. Seniors. First semester. Five hours.

**30. Economic Geology.** Recitations, lectures and laboratory work. An economic study of the rocks and minerals of economic importance including metals and non-metals. Seniors. Second semester. Five hours.

Prerequisite: One year of Geology.

**31. Experimental Psychology.** A course of lectures, recitations, and laboratory work on sensation, perception, attention, free and controlled association, and their application to crime detection, rote and logical memory, the learning process, and mental measurements. Juniors. First semester. Five hours.

**32. Comparative Psychology.** Recitations, lectures, and reports. The germinal bases of the mind. In the development of the mind comparisons are made between human development and that of other animals. The unity of life in its fundamental processes is studied by such comparisons. Seniors. Second semester. Three hours.



## CHEMISTRY AND CHEMICAL ENGINEERING

Professors Owens, Brown, and Groner, and Assistant Professor Schuyler

**1 and 2. General Inorganic Chemistry and Qualitative Analysis.** This is a fundamental course required of all Engineering students except those in Chemical Engineering. The course covers the law of chemistry, a study of the methods of preparation, properties and uses of the most important elements and their compounds. The application of chemistry to the arts and manufactures is an important feature of the course. About one-third of the time is devoted to qualitative analysis. The work is conducted by text-book, lectures, recitations, and laboratory work. First and second semesters. Five hours each semester.

**3 and 4.** This course is similar to 1 and 2 but modified to meet the needs of Chemical Engineering students. Additional work is required in this course. First and second semesters. Five hours each semester.

**\*5 and 6.** This course is similar to 1 and 2 but adjusted to meet the needs of students in Biology and those who intend to study medicine. First and second semesters. Five hours each semester.

**\*7 and 8.** This course is similar to 1 and 2 but adjusted to meet the needs of students in Home Economics. First and second semesters. Five hours each semester.

**9 and 10.** This is a briefer course in general inorganic chemistry. The work is suited to the needs of such students as desire a knowledge of chemistry for informational and cultural value. This course will not be considered as a prerequisite to any of the more advanced courses. Students who present high-school chemistry as an entrance credit will be allowed to register for the course.

First and second semesters. Three hours each semester.

**12.** This course is a continuation of 5 and 6 and is given to meet the entrance requirements in general inorganic chemistry of certain medical colleges. Juniors. Second semester. Four hours.

**13. Metallurgy.** The sources, manufacture, properties, and uses of the different metals, with the influence which various im-

\*Students who offer one unit of high school chemistry for entrance credit must present the laboratory note-book to the head of the department at the time of enrolling for the course.

purities exert, are studied. Special attention is given to iron and steel, and to the various special alloys which are being placed upon the market. Text, lecture and laboratory. Sophomores and Juniors. First semester. Two hours.

Prerequisite: Courses 1 and 2 or the equivalent.

**14. Agricultural Chemistry.** This is a course in the study of the relation of chemistry to agriculture. The course covers the essentials of plant and animal chemistry. A study is made of the composition of soils and fertilizers. The great principles of agriculture are given consideration. Second semester. Three hours.

Prerequisite: Courses 1 and 2 or the equivalent.

This course covers the legal requirements for teachers in the high schools of Pennsylvania.

**15. Quantitative Analysis.** This is a course in elementary quantitative analysis covering both volumetric and gravimetric methods. The course meets the needs of students who intend to study medicine, and others who desire a knowledge of elementary quantitative analysis. First semester. Five hours.

Prerequisite: Courses 5 and 6 or the equivalent.

**17 and 18. Quantitative Analysis.** Lecture, recitation and laboratory work. This course aims to teach the student the fundamentals of analytical procedure and manipulation. Gravimetric and volumetric determinations are first made with pure chemicals. This is followed by the analysis of limestone, ores, alloys, oils, gas, water, etc. The latter part of the second semester is given to special methods in technical analysis and the determination of traces of impurities in the so-called "chemically pure" reagents. Required of Chemical Engineers and elective for others who may be able to qualify for the work. Sophomores. First and second semesters. Five hours each semester.

Prerequisite: Courses 3 and 4 or the equivalent.

**19 and 20. Organic Chemistry.** This course is an introduction to the study of the carbon compounds. The work is given with emphasis on the relation of organic chemistry to industrial chemistry. The course is intended for Chemical Engineering students and others who may be able to qualify for the work. First and second semesters. Five hours each semester.

Prerequisite: Courses 3 and 4 or the equivalent.

**21 and 22.** This course is similar to 19 and 20 but adjusted to meet the needs of Biology students and those who intend to study medicine. First and second semesters. Four hours each semester.

Prerequisite: Courses 5 or 6 or the equivalent.

**23.** This is a brief course in the chemistry of carbon compounds. The work is arranged to meet the needs of Home Economics students. First semester. Three hours.

Prerequisite. Courses 7 and 8 or the equivalent.

**24. Food Chemistry.** This is an elementary course in the study of the chemistry of foods. Second semester. Three hours.

Prerequisite: Course 23.

**25 and 26. Industrial Chemistry.** A series of lectures and recitations upon the most important technical chemical operations exclusive of metallurgy. It is essentially a study of the application of chemical principles to technical processes and the mechanical methods of applying these processes, supplemented, so far as possible, by visits to plants in operation. The course includes a study of such industries as the manufacture of sulphuric acid, alkalies, glass, cement, rubber, paper, dyestuff, etc. Seniors. First and second semesters. Two hours each semester.

Prerequisite: Courses 13, 19, 20.

**27 and 28. Chemical Preparations.** Primarily a laboratory course, the experiments duplicating, so far as possible, the operations used in industrial works. Underlying principles and percentage yield are required in the written report of each experiment. About thirty-five preparations are required. Inorganic substances are first prepared and purified. Approximately one-third of the work consists of the electrolytic preparation of inorganic and organic compounds. Seniors. First and second semesters. Three hours each semester.

Prerequisite: Courses 13, 19, 20, 33, 34, Physics 2, 3.

**29 and 30. Physical Chemistry.** Class and laboratory work. Class work consists of lectures, recitations and problems. This course is fundamental in character and is intended to develop the



idea of physical chemistry as applied to actual problems in industrial operations. A study is made of the kinetic theory of gases, gas laws, vapor pressure, equilibria, phase rule, theories of solution, osmotic pressure, etc. The latter part of the year is given to the study of electro chemistry and chemical statics and dynamics. Laboratory work is one experiment per week. Written reports and discussions required for each experiment. The laboratory work includes the determination of density of gases, viscosity, optical activity, refraction, partition coefficients, molecular weights by various methods, reaction velocity, transport numbers, electromotive force, conductivity, etc. Students use the calorimeter, colorimeter, refractometer, polarimeter, tintimeter, viscosimeter, etc., and are made to recognize their application to industrial problems. Seniors. First and second semesters. Five hours each semester.

Prerequisite: Courses 17, 18, 19, 20, 33, 34; Mathematics through Integral Calculus; All Engineering Physics to the end of the Junior year.

**32. Physical Chemistry.** This is an elementary course in physical chemistry. The work is suited to the needs of Biology students and those who intend to study medicine. Second semester. Four hours.

Prerequisite: Courses 21, 22 or the equivalent.

This course meets the entrance requirements of all medical colleges.

**33 and 34. German Chemistry.** A course in which a study is made of selections from standard German periodicals. The work in this course is usually a study of the Chemiker Kalendar for the current year. Juniors. First and second semesters. One hour each semester.

Prerequisite: Courses 3, 4, 17, 18, German: 6 hours.

**35 and 36. Special courses.** These courses are given at the option of the professor in whose department such work would fall. They are laboratory courses open to Seniors. Credit to be arranged.

Note: Students who intend to teach chemistry should elect the following courses: 1 and 2 (or 3 and 4), 15 (or 17 and 18), 19 and 20, 25 and 26, 29 and 30.

## CIVIL ENGINEERING

Professor Lindemann

**1. Architectural Design.** A course in which are considered the elementary principles of building construction. Juniors. First semester. One hour.

**3 and 4. Bridges and Buildings.** The work of this course includes the solution of problems in graphic statics; the determination of stresses and deformations in framed structures by graphic and algebraic methods; the calculation and design of roof and bridge trusses, also the detailing and drafting of the same. Seniors. First and second semesters. Five hours each semester.

**6. Contracts.** A course in which are considered the principles of Common Law as applied to contracts. Seniors. Second semester. One hour.

**7. Hydraulics.** The work of this course includes the theory of Hydrostatics and Hydraulics; the flow of water over weirs, through orifices and tubes, and in pipes, canals and rivers; the measurement of water-power; the theory of water-wheels and turbines. Seniors. First semester. Three hours.

**9 and 10. Masonry and Foundations.** The work of this course includes a consideration of the materials of masonry construction, their preparation and use; a study of foundations—ordinary, pile and under-water; the investigation and design of masonry dams, retaining walls, abutments, piers, chimneys, culverts, and arches. Juniors. First semester. One hour. Second semester. Two hours.

**11 and 12. Roads and Pavements.** The work of this course includes a study of the economic location, design, and construction of roads and pavements; a comparison of the materials and methods of construction; the design of some road or pavement, including the preparation of drawings, specifications, and estimates for the same. Juniors. First semester. One hour. Second semester. Two hours.

**13 and 14. Strength of Materials.** The work of this course includes a study of simple and combined stresses, and the resulting deformations; a consideration of the methods employed in testing the materials of construction; the solution of numerous problems in the design and investigation of beams, columns, shafts,

pipes, and footings. Reinforced concrete receives special attention. Juniors. First semester. Two hours. Second semester. One hour.

**16. Water Supply and Sanitary Engineering.** The work of this course includes the consideration of collection and storage of water, quantity of water required, rainfall, flow of streams, evaporation, supplying capacity of water-sheds, springs and wells; a study of the various methods of sewage disposal; the design of a water supply system and of a sewage disposal plant. Juniors. Second semester. Three hours.

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## SURVEYING

Professor Drum

**1. Plane and Topographical Surveying.** Recitations on text, lectures, tests, field practice in each position on corps using transit, Y, dumpy and hand levels, plane table and compass in surveys for area, for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments.

Civil Engineering course. Sophomores. First semester. Five hours.

Prerequisite: Mathematics 2.

**2. Geodetic Surveying.** Recitations on text, lectures, tests, readings, and reports from literature of the U. S. C. G. S. and other sources.

Civil Engineering course. Sophomores. Second semester. Two hours.

**4. Railroad Surveying.** Recitations on text, lectures, tests. Computation, draughting, and field practice of simple, compound, and spiral curves. Field practice in each position on corps making a preliminary survey for a cross-country railroad. Computations and draughting for determining paper location, including grades, excavation, vertical curves, questions of haul, etc. Field practice in putting in paper location and setting slope stakes. An inspection of portions of the Reading and Pennsylvania tracks in a study of switches, Y's, and crossings.

Civil Engineering course. Sophomores. Second semester. Five hours.

Prerequisite : Course 1.



5. **City and Mine Surveying.** Standard practice in field and office methods in surveys incidental to city and mine work is given. Problems include simple triangulation and base line work, underground and night surveys in carrying azimuth into mine, locating boreholes, driving tunnels, lining up chambers, etc. Problems are so arranged that the validity of computations may be checked in the field.

Civil Engineering course. Juniors. First semester. Three hours.

Prerequisite: Course 4 and Mathematics 4.

6. **Surveying.** Course for technical students not of the Civil Engineering course. Recitations on text, lectures, tests. Field practice in the care, adjustment and use of surveying instruments, in surveying for area, topography, curve location, setting grade stakes, building location, foundations for machinery, etc. Computations and maps. Course restricted to Seniors. Second semester. Three hours.

A complete equipment of transits, levels, compasses, and plane tables with all accessories is maintained. Sections are not permitted to exceed 25 men and for field work the parties seldom exceed 4. Men are rotated in the various positions on the corps. Student assistants are provided when desirable and the work is individual and intensive. With the exception of Surveying 2 double time is required for class periods.

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## ECONOMICS AND POLITICAL SCIENCE

Professor Heim

Assistant Professor Howes

1. **Introduction to the State and Society.** The development of political institutions and of political and social theories. Sophomores. First semester. Two hours.

2. **Economic History.** The development of Economic Institutions, with special emphasis upon the development of the economic life of Europe. Sophomores. Second semester. Two hours.

3. **Economics.** A general course covering the field, but placing emphasis upon organization, value, production, and consumption. Sophomores. First semester. Three hours.

**4 Economics.** A continuation of Course 3. Current economic problems, with special reference to theories of distribution. Sophomores. Second semester. Three hours.

**5. Business Organization.** Problems of organization and administration of business units, and their interrelation. Juniors and Seniors. First semester. Three hours.

**6. Business Finance.** The financial organization of business units. Methods of raising funds and their management. Types of investment securities. Juniors and Seniors. Second semester. Two hours.

**7. Principles of Accounting.** Theory of balance sheet accounts. Problems of technique. Classification and interpretation of accounts. Preparation of financial statements. Juniors and Seniors. First semester. Three hours.

**8. Principles of Accounting.** A continuation of Course 7. Problems of partnership and corporation accounts. Labor saving devices. Valuation of assets. Juniors and Seniors. Second semester. Two hours.

Prerequisite: Course 7.

**9. Money and Banking.** Juniors and Seniors. First semester. Two hours.

**10. Public Finance.** Public revenue and expenditures. Preparation of budgets. Public taxation. Public borrowing. Juniors and Seniors. Second semester. Three hours.

**11. Markets and Marketing.** Analysis of markets. Methods and organization of markets, and methods of financing. In alternate years. Juniors and Seniors. First semester. Two hours.

**12. International Trade.** Foreign exchange. Commercial policies. Promotion of foreign trade and shipping. Methods of exporting. In alternate years. Juniors and Seniors. Second semester. Two hours.

**13. Railroad Transportation.** In alternate years. Juniors and Seniors. First semester. Two hours.

**14. Principles of Insurance.** A course in the principles of insurance with especial attention to life insurance and certain forms of social insurance. The following are matters of consideration: the theory of life insurance, mortality tables, selection of

lives, company organizations, policies, wage earner's insurance, the state and insurance. In alternate years. Juniors and Seniors. Second semester. Two hours.

**15. Business Law.** The place of law in business operations and a somewhat detailed study of the fundamental principles of the law of persons and of contracts. Juniors and Seniors. First semester. Two hours.

**16. Business Law.** A continuation of Course 15. The law as applied to agency, sales, suretyship, mortgages, pledges, negotiable instruments, partnership, corporations. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Course 15.

**17. National Government.** A descriptive course in the main features of the central government of the United States. Freshmen and Sophomores. First semester. Three hours.

**18. State Government.** This course is a continuation of course 17 and deals with state and county government in the United States. Should be taken in connection with Course 17 but does not need to be preceded by it. Freshmen and Sophomores. Second semester. Two hours.

**19. Comparative Government.** A study of the principles and operation of parliamentary government in England as it exists today, with some attention to the governments of Canada, Australia, and South Africa. Juniors and Seniors. First semester. Two hours.

**20. Comparative Government.** This course is a continuation of Course 19 and deals with the governments of France, Italy, Germany, Switzerland, and Russia. Juniors and Seniors. Second semester. Two hours.

**21. The Police Power.** Standards of legislation. The relation of public policy to social and economic questions. Juniors and Seniors. First semester. Two hours.

**22. Municipal Government.** A study of the various forms of city government in the United States. Municipal problems and reforms. Juniors and Seniors. Second semester. Two hours.

**23. American Law.** This is a course in the elements of law, The first semester deals largely with the following topics: (1) the nature and sources of the law, (2) the law of torts, and (3) the law of crimes. Juniors and Seniors. First semester. Three hours.

**24. American Law.** This course is a continuation of Course 23. The principal subjects of discussion are (1) the law of contracts, (2) partnership and corporations, (3) the law of principal and agent, (4) master and servant; employer and employee, (5) the law of persons and domestic relations, (6) public law: constitutional, administrative, and international law, (7) courts, remedies, and procedure. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Course 23.

**25. International Law.** The nature, history, and subjects of international relations. During the first semester attention is given to the nature and sources of international law, states and their essential attributes, and intercourse of states in time of peace. Alternates with Course 27. Juniors and Seniors. First semester. Two hours.

**26. International Law.** This course continues Course 25. The principal subjects for analysis are: the laws of war and the relations of belligerents, and the law and practice of neutrality. Alternates with Course 28. Juniors and Seniors. Second semester. Two hours.

Prerequisite: Course 25.

**27. American Diplomacy.** A study of the foreign relations of the United States: the distinctive feature of our foreign policy and our contribution to the law of nations. During the first semester are considered the following: (1) neutrality, (2) fisheries questions, (3) commercial restrictions, (4) the Monroe Doctrine, (5) freedom of the seas. Alternates with Course 25. Juniors and Seniors. First semester. Two hours.

**28. American Diplomacy.** This course is a continuation of Course 27 but does not need to be preceded by it. The following topics are matters of discussion: (1) expatriation, (2) arbitration, (3) expansion of the United States, (4) the League of Nations. Alternates with Course 26. Juniors and Seniors. Second semester. Two hours.

**29. Constitutional Law.** An advanced course in the principles of governmental powers and limitations in the United States. For those who have had some preparation in government and law. Some of the topics discussed are: the law in the courts, political rights under the constitution, personal and religious liberty, laws impairing the obligation of contracts. Open to those who have had Courses 15 and 16, or 17 and 18, or 23 and 24. First semester. Three hours.



**30. Constitutional Law.** This course is a continuation of Course 29. Cases will be read and discussed dealing with the regulation of interstate and foreign commerce, interstate privileges and immunities, due process of law as applied to taxation, procedure, police power, eminent domain, and the various other federal powers. A careful study is made of the jurisdiction of the federal courts. Second semester. Three hours.

Prerequisite: Course 29.

## EDUCATION \*

Professor Lawson and Dean Rivenburg

**1. History of Education.** Ancient and Medieval Periods. Sophomores. First semester. Three hours.

**2. History of Education.** Modern Period. Consideration of institutions, theories and movements in the United States. Sophomores. Second semester. Three hours.

**3. Introduction to Teaching.** The Principles of Education. Sophomores and Juniors. First semester. Three hours.

**4. Introduction to Teaching.** The Principles of Education. Sophomores and Juniors. Second semester. Three hours.

Course 3 or Course 4 is required for State Certification to teach.

**5. Secondary Education.** Seniors. First or second semester. Three hours.

This course is repeated in the second semester for the convenience of students in Observation and Practice Teaching.

**7. Educational Measurements.** Seniors. First semester. Three hours.

**8. Educational Administration.** Seniors. Second semester. Three hours.

**9. Educational Sociology.** Juniors and Seniors. First semester. Three hours.

**10. Philosophy of Education.** Juniors and Seniors. Second semester. Three hours.

**11. Educational Psychology.** Two sections, A and B. Required for State Certification to teach. Juniors and Seniors. First semester. Three hours.

\* The attention of prospective teachers is called to the fact that the Appointment Bureau of the University and the Teacher Placement Service of the Pennsylvania State Department of Public Instruction without any charge assist graduates in securing suitable positions in schools. For further information address The Appointment Bureau, Bucknell University, or The Teacher Bureau, Department of Public Instruction, Harrisburg, Pa.

**12. Advanced Educational Psychology.** Juniors and Seniors. Second semester. Three hours.

Prerequisite: Philosophy 1 or Education 11.

**13. Psychology of Childhood.** Juniors and Seniors. First semester. Three hours. Alternating with Course 15.

**14. The Junior High School.** Juniors and Seniors. Second semester. Three hours. Alternating with Course 16.

**15. The Elementary School.** Juniors and Seniors. First semester. Three hours. Alternating with Course 13.

**16. Newer Educational Movements—The Experimental School, Supervised Study, The Socialized Recitation, The Project Method.** Juniors and Seniors. Second semester. Three hours. Alternating with Course 14.

**17 and 18. Observation and Practice in Teaching.** Seniors. Two hours. (State Credit—6 hours) Required for State Certification. Students taking Practice Teaching will be divided into two groups, one for each semester to enable satisfactory assignments to the high schools.

**Teachers' Course in English.** (English 68). Professor Robbins.

**Teachers' Course in Mathematics.** (Mathematics 22). Associate Professor Everett.

**Teachers' Course in French.** (French 10). Professor Griffith.

**Statistical Methods.** (Mathematics 28). Associate Professor Everett.

**Human Physiology.** (Biology 14). Professor Rice. Required for State Certification in New Jersey.

**Experimental Psychology.** (Biology 31). Professor Rice.

**Comparative Psychology.** (Biology 32). Professor Davis.

**School Hygiene.** (Biology 16). Professor Davis.

Attention is directed to educational courses in the departments of Chemistry and Home Economics.

## LOGIC

**2. Logic.** An introductory course. The origin and growth of knowledge. The principles of reflective thinking. Reasoning. The inductive and deductive methods. Sophomores and Juniors. Second semester. Three hours. Professor Lawson.



## ELECTRICAL ENGINEERING

Professor Rhodes, Mr. Irland, and Mr. Shaffer

**1. Direct Current Machinery.** This course begins with a brief review of electromagnetism, followed by a careful study of the electric circuit involving the principles of the simpler alternating current circuits. Numerous problems are given to clearly illustrate the laws of these circuits. Attention is given to the various types of electrical measuring instruments, and their calibration, measurements of inductance, capacity and resistance. Then follows a careful study of the principles of dynamo electric machines as to their structural details, performance characteristics, and problems in operation. The work of the course is accomplished through lectures, recitations, laboratory experiments and writing of reports. Juniors. First semester. Five hours.

This course must be preceded or accompanied by Physics 5.

**2. Alternating Current Machinery.** The study of applied circuits is enlarged upon in this course and extended to include generators, transformers, induction motors, synchronous motors, synchronous converters, and motor generators. The same plan is followed as that in the development of the preceding course, and the laboratory work is primarily designed to illustrate the theory of the course, but wherever practicable, commercial tests in operation are performed. Juniors. Second semester. Five hours.

Prerequisite: Course 1.

**3. Theoretical Mechanics.** A rapid review of the type forms of differential equations most frequently met in this work is taken up first. Then follows the study of forces, couples, moment of inertia, and flexible cords, together with the geometry of motion, dynamics of machinery, work, energy, and impact. Juniors. First semester. Three hours.

Prerequisite: One year of Calculus.

**5 and 6. Electrical Design.** Numerous problems on the magnetic circuit are taken up and followed with the design and working drawing of an electromagnet. Then follows the discussion of the principles of design as applied to continuous and alternating apparatus. Each student is required to make complete computations for a continuous current generator or motor, alternator, induction motor, and two transformers. All electrical and magnetic dimensions are computed and scale drawings of the important

parts are made. Seniors. First and second semesters. Three hours each semester.

Prerequisite: Courses 1 and 2.

**7. Generating Stations.** Comparative performance of the important prime movers and the economic management of generating plants and substation equipment are studied in detail and practical estimates made. Attention is also given to the application of storage batteries to the problems of distribution. The care of storage batteries, arrangement of switch gear, instruments, transformers, and lightning arresters are taken up in their relation to the generating station. Seniors. First semester. Three hours.

Prerequisite: Course 2 and Mechanical Engineering 2.

**9. Telegraphy and Telephony.** Attention is given in detail to the various systems of electric telephony and telegraphy in practical use, with reference to their principles and modes of application. The installation, maintenance and testing of telephone and telegraph lines are considered as well as the difficulties of their operation. Efficiency tests are made and graphs plotted. Seniors. First semester. Four hours.

Prerequisite: Courses 1 and 2, and Physics 5.

**10. Electric Transmission, Line Construction, Wiring, and Economics.** The various systems and arrangements for power distribution, wiring for lighting, and substation feeder systems are investigated. Practical problems in the economics of transmission and distribution including line construction are computed, and complete typical systems are worked out in detail. Seniors. Second semester. Three hours.

Prerequisite: Course 2.

**11. Industrial Motor Control.** A study is made of the fundamental diagrams upon which most practical motor control circuits are based. Explanations are made of a large number of different types of hand controllers and automatic contactors and relays used in the control of electric motors of all types, both alternating and direct current. The student is required to trace the circuits and explain the operation of a number of control wiring diagrams in practical use, thus becoming familiar with various control devices and their application. Special course for those who have already taken the course in Alternating Current Machinery. First semester. Two hours.

**12. Electric Railways, Construction, Operation, and Economics.** This course deals with the principles and design of the different types of railway construction. Analysis of train performance, types of control, systems of braking, and methods of motor suspension are studied in detail. Estimates of complete equipment for a short line are made and prospective revenue from operation considered. The economics of the operation and maintenance of American railways is considered in the conclusion of the course. Seniors. Second semester. Three hours.

Prerequisite: Course 2.

**13. Mechanical Telephone Exchanges.** Special course. First semester. Three hours.

**14. Radio Circuits.** The first part of this course consists of the study of various types of radio apparatus and the circuits used in transmitting and receiving sets for wireless telegraphy. Particular attention is paid to the principles of operation of the various devices. The latter part of the course consists of the experimental determination of the characteristic curves of three electrode vacuum tubes of several types, and a study of the theory of operation of these tubes as used in radio circuits. The students are given an opportunity to visit and inspect the radio station of the University, which is well equipped with transmitting and receiving apparatus. Special course for those who have already taken the course in Alternating Current Machinery. Second semester. Two hours.

**15. Storage Batteries.** Special course. First semester. Three hours.

**16. Oscillography.** This course deals with the construction, adjustment and operation of the oscillograph. Oscillograms of continuous and instantaneous fluctuations of current and voltage in various forms and arrangements of electrical circuits are taken and printed. A report is presented containing a description of the construction and operation of the apparatus together with an analysis of the oscillograms obtained. Special course. Second semester. Three hours.

Prerequisite: Course 2.

## DRAWING

**1 and 2. Freshman Drawing.** The work covers the use of instruments: geometrical problems: form and proportion of standard letters: methods of spacing and laying out of titles: orthographic and isometric drawings: sectioning, shading, and developments. First and second semesters. Two hours each semester.

Required of all candidates for the B.S. degree except those in Home Economics.

**3 and 4. Sophomore Drawing.** The work of the first year is continued by the use of special problems for each branch of engineering. The Electrical Engineering and Mechanical Engineering students will make detailed drawings of bolts, nuts, and machine parts and also assembly drawings of complete machines. The Civil Engineering students will make detailed drawings of such structures as sewers, tunnels, bridges, and will enlarge and reduce maps. First and second semesters. Two hours each semester.

Required in Civil Engineering, Electrical Engineering, and Mechanical Engineering courses.

**5 and 6. Junior Drawing.** This course is required in the Electrical Engineering and Mechanical Engineering courses and covers the algebraic and graphical solution of problems in simple mechanisms such as levers, linkages, wheels in trains, pulleys, cams, gears and screws, and the mathematical design of cams and gear teeth. First and second semesters. Two hours each semester.

## ENGLISH

Professors Robbins, Rockwell, and Whyte; Associate Professor Groves; Messrs. Warfel and Beers; and Mrs. Phillips

Undergraduates who major in English are required to complete a total of twenty-four semester hours in the department, of which at least three must be in composition and eighteen in literature.

The following are approved sequences:

Poetry: 41; 42; 47 or 49; 52; 9, and 47 or 49; 58 or 62; 53 or 57; and 61 or 63; 58 or 64.

Prose: 41; 42; 47 or 49; 52; 9, and 47 or 57; 58 or 64; 55 or 57, and 59 or 63; 10 or 58 or 64.

Drama: 41; 42; 47 or 49; 52; 9, and 53 or 55; 58 or 66; 27 or 61, and 53 or 55; 58 or 66.

Composition: 41; 42; 7 or 9, and 57 or 63; 8 or 10, and 52; 47 or 49 or 69; 58 or 64; 59 or 63; 58 or 64, and 66 or 68.

Public Speaking: 41; 42; 9, and 53 or 55; 52; 47 or 49 or 69, 62 or 64; 23 or 25 or 27, and 61 or 63; 24 or 26, and 62 or 66.



## ENGLISH COMPOSITION

Associate Professor Groves, Professors Rockwell and Robbins, Mr. Warfel, Mr. Beers, and Mrs. Phillips

1. **Freshman Composition.** The study and application of the principles of English composition, with constant practice in theme writing, personal conferences, and collateral reading. Required of all Freshmen who do not take English Literature 41. First semester. Three hours.

2. **Continuation of Course 1.** Required of all Freshmen who do not take English Literature 42. Second semester. Three hours.

Note: This course or its equivalent is the prerequisite for all advanced courses in Composition.)

6. **English for Engineers.** An advanced course primarily for Senior Engineering students. Study and practice of commercial correspondence, the technical report, and technical magazine articles. Second semester. Three hours.

7. **News Writing.** A preliminary study of the organization of the daily press, with practice in the common types of news-writing, followed by an examination of the function of the press as a distributor of news and a study of news values. Open to Sophomores, Juniors, and Seniors, by permission of the instructor, but intended primarily for Sophomores. First semester. Two hours.

8. **Journalism.** Editorial problems. A study of the American periodical as an organ of opinion, with practice in the writing of editorials. Open to Sophomores, Juniors, and Seniors, by permission of the instructor. Second semester. Two hours.

(Note: In connection with Composition 8, the editor-in-chief of the Bucknellian may receive an additional credit of three hours if approved by the English department.)

9. **Advanced Composition.** The study and practice of the essay and other important non-fictional forms of composition. Elective for Seniors and Juniors, and for Sophomores who have taken English Literature 41-42. First semester. Three hours.

10. **Short Story Writing.** Studies in the structure of the shorter forms of prose fiction, based upon models, with practice in writing the short story. Open to Juniors and Seniors, by permission. Second semester. Three hours.

## PUBLIC SPEAKING

Professor Whyte

**21 and 22. A study of the Various Forms of Discourse—Description, Narration, Exposition, Argumentation and Persuasion.** A general view of the entire field of expression. Masterpieces of the forms of discourse will be read aloud and analyzed. Drill in the correct use of the voice and contributing physical expression. Freshmen. First and second semesters. Two hours each semester.

**23 and 24. Effective Speaking and Interpretation.** The construction of speeches with a definite end in view adapted to a particular occasion. The development of a fluent oral vocabulary. Getting and holding attention. Authority in speaking and reading. Sophomores. First and second semesters. Two hours each semester.

**25. Advanced Argumentation and Debate.** To meet the demands of those who desire drill in oral argumentation. Discussion of the disputed questions of the day. This course should be elected by those who desire to enter trials for the intercollegiate and junior debates and by those who expect to enter public life. Juniors and Seniors. First semester. Three hours.

**26. Dramatic Interpretation and Amateur Dramatics.** Impersonation, action, stage craft. The art of being natural. Study of dramatic masterpieces and master actors. Members of the Lyceum and the dramatic organizations are especially urged to consider the election of this course. Second semester. Three hours.

Prerequisite: English 28, 29, 41 or 42.

**27. The Place of Expression in Instruction.** Interpretation by reading aloud. The occasional talk. The prepared lecture. Teaching as one having authority. Exposition, explanation, exhibition. The forms of discourse—the handmaid of teaching. Open to prospective teachers. First semester. Two hours.

**28. Clear, Effective Presentation of Facts.** The development of the subject, a study of logical outlining. Making clear and illuminating the technical. Reaching the audience, the community. Selling your goods. Open to Engineering students. Second semester. Two hours.



**29. Pulpit Reading and Delivery.** A practical course in the oral interpretation of the Scriptures and in effective, authoritative delivery of sermons and occasional talks. Material for classroom use, the modern translations of the Bible and the sermons of great preachers. Open to all prospective ministers. First semester. Two hours.

**30. Salesmanship.** Selling ideas and goods to one man. Studying the buyer. Methods of approach. Knowing and believing in the product presented. Choosing the occasion, the psychological moment. Confirming the sale. Juniors and Seniors. Second semester. Two hours.

## ENGLISH LITERATURE

Professors Robbins and Rockwell, Associate Professor Groves,  
and Mr. Warfel

**41. Literature-Composition.** A combined course primarily intended for students intending to make English their major subject; equivalent to Composition 1 and Literature 43; lectures, recitations, oral and written themes, and conferences; a survey of English literature to the middle of the 18th century; collateral reading. Elective for Freshmen. First semester. Five hours.

**42. Literature-Composition.** Continuation of Course 41; equivalent to Composition 2 and Literature 24. Elective for Freshmen. Second semester. Five hours.

Prerequisite: Course 41 or Composition 1-2 and Course 43.

**43. English Survey.** A course in English literature to the middle of the 18th century; lectures, recitations, collateral reading, and written reports. Required of all candidates for the degree of A.B. who have not taken Course 41. First semester. Three hours.

Prerequisite: Composition 1-2.

**44. English Survey.** Continuation of Course 43. Required of all candidates for the degree of A.B. who have not taken Course 42. Second semester. Three hours.

Prerequisite: Composition 1-2 and Course 43.

(Note: This course or its equivalent is the prerequisite for all advanced courses in literature.)

**45. Rapid Survey.** A course in English literature to the end of the 19th century; equivalent to Course 43-44 except that it covers a smaller number of masterpieces. Required of all candidates for the degree of B.S. in Biology or Home Economics. First semester. Three hours. This course does not count as part of a major or minor in English.

**47. Anglo-Saxon.** A study of the language and literature of Old English. Elective for Seniors and Juniors and for Sophomores who have taken Course 41-42. First semester. Three hours. Offered alternate years.

\* **49. Chaucer.** A study of the language and literature of Middle English; reading of the "Canterbury Tales;" written reports on collateral reading. Elective for Seniors and Juniors and for Sophomores who have taken Course 41-42. First semester. Three hours. Offered alternate years.

**52. Shakespeare.** An intensive study of three plays and rapid reading of twenty. Elective for Seniors and Juniors and for Sophomores who have taken Course 41-42. Second semester. Three hours.

**53. Early English Drama.** The drama as a literary type and its history from the earliest times to the closing of the theatres in 1642; reading of plays by pre-Elizabethan and Elizabethan dramatists exclusive of Shakespeare. Juniors and Seniors. First semester. Three hours. Offered alternate years.

\* **55. Modern English Drama.** History of the drama in England from 1660 to the end of the Victorian period. Juniors and Seniors. First semester. Three hours. Offered alternate years.

**57. Seventeenth Century Poetry and Prose.** A study of the works of Bacon, Milton, Bunyan, Dryden, and the Cavalier Poets. Juniors and Seniors. First semester. Three hours. Offered alternate years.

**58. Eighteenth Century Poetry and Prose.** A study of the works of Swift, Pope, Addison, Steele, Johnson, and Goldsmith. Juniors and Seniors. Second semester. Three hours. Offered alternate years.

**59. Modern English Novel.** Study of the leading types of English prose fiction. Juniors and Seniors. First semester. Three hours. Offered alternate years.

\* Not offered 1924-5.

**61. Romantic Poetry.** A study of the works of Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. Juniors and Seniors. First semester. Three hours. Offered alternate years.

\* **62. Victorian Poetry.** Modifications of romanticism from 1832 to 1892; study of the works of Tennyson, Browning, Clough, Rossetti, Morris, and Swinburne. Juniors and Seniors. Second semester. Three hours.

\* **63 Victorian Prose.** Realism and the influence of science and the rise of democracy; study of the works of Carlyle, Arnold, Ruskin, Pater, Huxley, and Newman. Juniors and Seniors. First semester. Three hours. Offered alternate years.

\* **64. Recent Poetry and Prose.** Leading English and American non-dramatic authors and movements of the last thirty years. Juniors and Seniors. Second semester. Three hours. Offered alternate years.

\* **66. Recent Drama.** A study of the new dramatic literature of Europe and America: its varieties, technic, aims, and problems. Juniors and Seniors. Three hours. Offered alternate years.

\* **67. American Literature.** A survey of American literature in the light of American ideals. Juniors and Seniors. First semester. Three hours. Offered alternate years.

**68. Teachers' English.** A study of the aims and methods of secondary school English teaching; review of the history of literature. Elective for approved Seniors and Juniors whose major or minor is English. Second semester. Three hours. Offered alternate years.

\* **69. History of the English Language.** Phonology and morphology and historical grammar. Juniors and Seniors. First semester. Three hours.

\* Not offered 1924-5.

## FUNDAMENTALS

President Hunt

1. The President meets the Freshmen, in four sections, one hour a week the first semester in a study of fundamental truth and the problems of student life. One hour.

The text-book for study is Fisher's small *Manual of Christian Evidences*.

## GERMAN

Professor Rockwell

**1. Elementary German.** Drill on pronunciation. Elements of grammar. Reading of easy prose. First semester. Three hours.

**2. Elementary German.** Reading of easy prose, free reproduction, vocabulary drill, dictation. Second semester. Three hours.

**3. Intermediate German.** Reading of prose. Practice in speaking and writing German. Vocabulary drill. Dictation. First semester. Three hours.

Prerequisite: Course 2 or its equivalent.

**4. Nineteenth Century Novel.** Rapid reading of leading novelists. Practice in speaking and writing German. Second semester. Three hours.

Prerequisite: Course 3.

**5. Schiller.** Reading of leading dramas. Discussion of life and work of Schiller. First semester. Three hours.

Prerequisite: Course 4.

**6. Lessing.** Reading of leading dramas, discussion of life and significance of Lessing. Second semester. Three hours.

Prerequisite: Course 5.

**7. Goethe.** Reading of principal dramas. Discussion of life and work of Goethe. First semester. Three hours.

Prerequisite: Course 6.

**8. Goethe.** Reading of Goethe's prose, discussion of his significance. Second semester. Three hours.

Prerequisite: Course 7.

**9. Nineteenth Century Drama.** Kleist and Grillparzer. Reading of principal dramas, discussion of their life and work. First semester. Three hours.

Prerequisite: Course 8.

**10. Nineteenth Century Drama.** Hebbel and Ludwig. Reading of principal dramas, discussion of their life and work. Second semester. Three hours.

Prerequisite: Course 9.

**11. The German Lyric.** Goethe, Schiller, Heine, Uhland, and minor poets. First semester. Three hours.

Prerequisite: Course 8.



**12. The Last Generation in German Literature.** A brief survey of modern developments in German and Austrian literary life. Second semester. Two hours.

Prerequisite: Course 11.

**14. Teachers' Course.** A brief survey of the materials and methods of the teaching of German. Second semester. One hour.

Prerequisite: Course 11.

**15 and 16. Readings in Biological German.** First and second semesters. One hour each semester.

Prerequisite: Course 2 or its equivalent.

**17 and 18. Readings in German Chemistry.** See Chemistry 33 and 34.

Prerequisite: Course 4 or its equivalent.

## GREEK

Professor Hamblin

Students entering without preparation in the language can begin Greek in College.

**1 and 2. Greek for Beginners.** An introduction to the Greek language based upon graded selections from Menander, Xenophon, Plato, Herodotus, and the New Testament. By an intensive study of the essential forms, a careful study of the vocabulary of representative Greek authors, and reading easy selections at sight, it is intended to cover in one year an equivalent of the usual preparatory course. First and second semesters. Three hours each semester.

**3. Plato. The Apology and Crito.** Special topics in Greek syntax. The life and influence of Socrates. Selections from the Memorabilia at sight. First semester. Three hours.

**4. Lysias.** Select orations, with sight reading and Prose Composition. A study of Attic Oratory. Second semester. Three hours.

**5 and 6. Greek Drama.** One play each of Aeschylus, Euripides, and Aristophanes. Study of the Greek drama, theatre and meters. The development of drama. First and second semesters. Three hours each semester.

Alternating with Courses 7-8.

**7 and 8. New Testament Greek.** Translation of the synoptic gospels; interpretations; Burton's *Moods and Tenses*; characteristics of Hellenistic Greek. Designed for students desiring a linguistic and historical foundation for the interpretation of the New Testament. First and second semesters. Three hours each semester.

Alternating with Course 5-6.

**9. Greek Civilization.** Political and Constitutional History of Greece. Influence of Greek civilization and thought on the world. Sophomores. First semester. Three hours.

Required of students in the A.B| course who do not elect an ancient language.

**10. Greek Literature in English.** A course especially designed for students in the scientific courses, that they may become acquainted with some of the Greek masterpieces. The best translations will be studied and explained, and informal lectures will be given on various phases of Greek Literature. Second semester. Three hours.

**12. Everyday Greek.** Greek words in English, including scientific terms. Intended to teach the use, meaning, and pronunciation of words of Greek origin, to those who have never studied the Greek language. Sophomores, Juniors, and Seniors. Second semester. Two hours.

## HISTORY

Professor Colestock

Courses 1 and 2 are introductory to all further historical study, and should be taken in the freshman year. Juniors and Seniors will not be admitted to these courses.

For students whose major is History any two hour course may be expanded into a three hour course by the doing of two and one-half hours extra work under the direction of the Department.

Courses 3, 4, 7 and 8 are consecutive in English History; courses 5, 6, 9 and 10 are consecutive in American History. Wherever possible the student should plan to take these groups in sequence. Course 14 should be preceded by Course 13.

In Courses 15 and 16 the class will study selected current historical problems as presented in the best periodical literature. Each student will be required to subscribe for at least one designated periodical.



1. **Medieval Europe.** First semester. Three hours.
2. **Modern Europe to 1815.** Second semester. Three hours.
3. **English History to the Elizabethan Period.** First semester. Two hours.  
Alternating with History 7.
4. **English History from the Reign of Elizabeth.** Second semester. Two hours.  
Alternating with History 8.
5. **American History: To the End of the American Revolution.** First semester. Two hours.  
Alternating with History 9.
6. **American History: From Washington to Lincoln.** Second semester. Two hours.  
Alternating with History 10.
7. **Development of the British Commonwealths.** First semester. Two years.  
Alternating with History 3.
8. **Constitutional History of England.** Second semester. Two hours.  
Alternating with History 4.
9. **American Biography.** First semester. Two hours.  
Alternating with History 5.
10. **Recent History of the United States.** Second semester. Two hours.  
Alternating with History 6.
11. **Latin America.** First semester. Two hours.  
Alternating with History 13.
12. **The Ancient Orient.** Second semester. Two hours.  
Alternating with History 14.
13. **Contemporary Civilization.** First semester. Two hours.  
Alternating with History 11.
14. **Contemporary Civilization.** A continuation of History 13. Second semester. Two hours.  
Alternating with History 12.
15. **Current Historical Problems.** First semester. Two hours.
16. **Current Historical Problems.** A continuation of History 15. Second semester. Two hours.

## HOME ECONOMICS

Professor Carey, Miss Douglass, and Miss Sindle

**1 and 2. Drawing.** Freehand drawing. lettering, perspective, drawing technical finishings in a dress. Sketching of gowns and hats. Freshmen. First and second semesters. One hour each semester.

**3. Home Decoration.** This course deals with the furnishing of the home. The object of the course is to develop good judgment and taste in the selection and arrangement of furnishings for the home. Sophomores. First semester. One hour.

**4. Costume Design.** Short history of costume. Value of lines in composition. The effect of contrast and combinations. Costume and color for different types. Sophomores. Second semester. Two hours.

Prerequisite: Courses 1, 2.

**5 and 6. Millinery.** Making and covering of frames and fitting and trimming of hats. Juniors. First and second semesters. Three hours each semester.

**7 and 8. Garment Making.** Elementary sewing; fundamental stitches, hand and machine work applied to undergarments, darning, mending, machine appliances, dressmaking and drafting, fitting and making of cotton waists and dresses. Students provide material subject to the approval of the instructors. Juniors. First and second semesters. Three hours each semester.

**9 and 10. Clothing.** Advanced dressmaking and drafting of patterns, cutting and fitting, making of silk waists and dresses and wool dress, use of commercial and drafted patterns.

Practical work in costume design and draping on the form. Seniors. First and second semesters. Three hours each semester.

**11. Hygiene.** Home nursing, care of sick room, care of patients, first aid, simple bandaging, hygienic care of the home, relation of the home to the community. Sophomores. First semester. Three hours.

**12. Textiles.** Study and identification of cotton, wool, silk, and linen; their appropriateness in clothing. Sophomores. Second semester. One hour.

**13. Meal Preparation and Table Service.** The application of the principles of cookery to the preparation and serving of meals. The course will include the study, planning, cooking and serving of meals, methods of preparation and garnishing. Juniors. First semester. Two hours.

Prerequisite: Course 14, Chemistry 23, 24.

**14. Elementary Course in Foods.** Selection and preparation of foods; their chemical composition and processes of manufacture. Laboratory work emphasizing fundamental principles of cookery. Sophomores. Second semester. Three hours.

**15. Household Management.** Care of house, choice of household equipment, and labor saving devices; apportionment of income. Juniors. First semester. Three hours.

**16. Food and Nutrition.** Food requirements at various ages in health and in certain diseases. Construction of dietaries. Invalid cookery. Juniors. Second semester. Four hours.

Prerequisite: Course 14.

**17. Teachers' Course.** Equipment of laboratories; methods of presenting work; correlation with other subjects; planning and presenting lessons. Seniors. First semester. Three hours.

**18. Institutional Cookery.** Meal-planning with emphasis on the supplying of adequate diet to large groups. Attention to organization of institutional kitchen and lunchroom. Seniors. Second semester. Three hours.

Prerequisite: Courses 14, 16.

**20. Dietetics.** Food requirements of the individual in health and disease, the nutritive properties of the various foods. Dietaries planned with especial regard to economic and social conditions. Seniors. Second semester. Four hours.

Prerequisite: Courses 14, 16.

**22. Advanced Course in Nutrition.** Physiological, bacteriological and chemical problems of food and nutrition. Special work on infant nutrition. Seniors. Second semester. Four hours.

Prerequisite: Courses 14, 16. Chemistry 7, 8, 17, 18.

**23. Descriptive Psychology.** A course in descriptive psychology, in which the facts and laws of the mind are carefully studied. Juniors. First semester. Three hours.

**24. Child Psychology.** A course in child psychology, showing the relation of mind and body, and how the ideal of a sound mind in a sound body may be attained. Special attention is given to problems arising out of family and social relations. Juniors. Second semester. Three hours.

Prerequisite: Course 23.

**25. Vocational Psychology.** First semester. Three hours.

Prerequisite: Course 23.

**Household Physics (Physics 1, 2, 11, 12).** This course is designed to provide information relative to domestic engineering by presenting: first, the general principles of the various branches of physics; second, the household appliances based upon these principles. Classroom work is supplemented by experiments performed in the laboratory by the individual students, and by observation of the methods of installation of various appliances. Juniors. First and second semesters. Three hours each semester. Professor Simpson.

## LATIN

Professor Ballentine

**1 and 2. Course for Beginners.** First and second semesters. Three hours each semester.

**3 and 4. Cicero.** (Orations); Vergil (Aeneid). First and second semesters. Three hours each semester.

Courses 1-2 and 3-4 are offered for those who are not prepared to pursue the regular Freshman elective.

**5 and 6. Cicero.** (De senectute); Pliny (selected letters); Roman Comedy (two or three plays of Terence). First and second semesters. Three hours each semester.

**7. Livy.** First semester. Three hours.

Prerequisite: Courses 5, 6.

**8. Horace** (selections). Second semester. Three hours.

Prerequisite: Courses 5, 6.

**10. Roman Civilization.** Lectures, prescribed reading. Sophomores. Second semester. Three hours.

Required of students in the A.B. course who do not elect an ancient language.



11. **Juvenal** (the principal Satires). First semester. Three hours.

Alternating with Course 13.

Prerequisite: Course 7.

13. **Tacitus** (Annals). First semester. Three hours.

Alternating with Course 11.

Prerequisite: Course 7.

14. **Plautus** (selected plays). Second semester. Three hours.

Alternating with Course 16.

Prerequisite: Course 8.

16. **Latin Poets** (selections). Second semester. Three hours.

Alternating with Course 14.

Prerequisite: Course 8.

17. **Roman Philosophy** (Cicero or Seneca). First semester. Three hours.

Alternating with Course 19.

Prerequisite: Course 7.

19. **Roman Law**. The course does not require a knowledge of the Latin language. Juniors and Seniors. First semester. Three hours.

Alternating with Course 17.

21. **Latin Composition**. Sophomores, Juniors, and Seniors. First semester. One hour.

## MATHEMATICS

Professor Bartol, Associate Professor Everett, Mr. Gold,  
and Mrs. Clark

1. **Algebra**. Freshmen. First semester. Four hours. Prescribed for all degrees.

2. **Plane Trigonometry**. Freshmen. Second semester. Two hours.

4. **Analytic Geometry**. Freshmen. Second semester. Three hours.

Prescribed in the Engineering and Biology courses: elective in all others.

5. **Solid Geometry and Spherical Trigonometry**. Sophomores. First semester. Three hours.

A college subject for those not taking an Engineering course or the course in Biology. Open to Freshmen who have had Course 1.

**7 and 8. Descriptive Geometry.** The course consists of practice in elementary orthographic projection with analytical study. it is basic to Mechanical Drawing. Sophomores. First and second semesters. One hour each semester.

Prescribed in the Engineering courses.

**9. Introductory Calculus.** Sophomores. First semester. Three hours.

Prerequisite: Courses 1, 2, 4.

Not open to Engineers; elective in all other courses.

**10. Descriptive Astronomy.** The course consists mainly of a study of the earth and its motions, and of the constellations. Sophomores. Second semester. Three hours.

**11. Differential Calculus.** The theory is developed in the use of limits. Applications are freely made to the problems of Mechanics. Sophomores. First semester. Three hours.

Prerequisite: Course 4.

Prescribed in the Engineering courses.

**12. Integral Calculus.** Frequent applications are made to the problems of Geometry, Astronomy and Physics. Sophomores. Second semester. Three hours.

Prerequisite: Courses 4 and 11.

Prescribed in the Engineering courses.

**13. Higher Analytics.** The course covers an elementary treatment of the geometry of three dimensions, surfaces of revolution and higher plane curves. Alternates with Course 15. Juniors and Seniors. First semester. Three hours.

Elective in all the general courses except those of the Engineering departments.

**14. Essentials of Calculus.** Sophomores. Second semester. Three hours.

Prerequisite: Courses 4, 9.

Not open to Engineers. Elective in all other courses.

**15. Advanced Algebra.** The course includes an elementary treatment of Determinants and of the Theory of Equations. Alternates with Course 13. Juniors and Seniors. First semester. Three hours.

Elective for all undergraduates except those in the Engineering courses.

**16. Mathematics of Investments.** Freshmen. Second semester. Two hours.



17. **Practical Astronomy.** A study of text-book and of instruments in the Observatory, with some practice. Alternates with Course 19. Juniors and Seniors. First semester. Three hours.

Prerequisite: Course 10.

18. **Statistics.** Freshmen. Second semester. Two hours.

19. **Differential Equations.** An introductory study. Alternates with Course 17. Juniors and Seniors. First semester. Three hours.

Prerequisite: Courses 11 and 12.

20. **The Mathematical Theory of Investments.** An elementary treatment of the subject. Alternates with Course 22. Juniors and Seniors. Second semester. Three hours.

22. **Teachers' Mathematics.** A reading course in the history and literature of Mathematics, and a study of present day methods of teaching the subject. Alternates with Course 20. Juniors and Seniors. Second semester. Three hours.

24. **Field Astronomy with Spherical Trigonometry.** Observations are made chiefly with surveying instruments, and computations are made from the students' field notes. Juniors. Second semester. Three hours.

Prescribed in the Civil Engineering course.

26. **Advanced Calculus.** The course includes centroid and moment of inertia problems from Mechanics, with a brief treatment of Differential Equations. Juniors and Seniors. Second semester. Three hours. Alternating with Course 28.

Prerequisite: Courses 11 and 12.

28. **Statistical Methods.** Juniors and Seniors. Second semester. Three hours. Alternating with Course 26.

## MECHANICAL ENGINEERING

Professor Burpee, Mr. Wilson, and Mr. Kunkel

2. **Boilers and Engines.** This is a general course dealing in a concrete way with the generation and use of steam for power purposes. The course is largely descriptive and experimental; the text-book work being well supplemented by problems illustrating the subject matter.

The topics covered most fully are the analysis and combustion of fuels; types, construction and setting of boilers together with their auxiliaries. The steam engine and indicator are studied in a general way with special emphasis upon performance of the engine.

The results of the term's work are collected into a single comprehensive form by means of a series of boiler, engine and plant tests which are written up and reported in accordance with the Test Code of the American Society of Mechanical Engineers. Text-book, Gebhardt's *Steam Power Plant Engineering*, latest edition. Juniors. Second semester. Four hours.

Prerequisite: Mathematics 11 and 12, and Physics 3 and 4.

**3. Steam Turbines.** In this course the steam turbine theory and design are taken up in detail. A careful study is made of the principles underlying the impulse, reaction and mixed turbine. The entire field is gone over and the ideas obtained are collected and expressed by actually computing and drawing designs for two machines, one impulse and one reaction or mixed turbine. Text-book, Moyer *Steam Turbines*, latest edition. Seniors. First semester. Four hours.

Prerequisite: Course 2.

**5. Steam Power Plants.** This course deals with the power plant as a whole. The matters receiving the major amount of attention are those pertaining to condensers, power plant auxiliaries, piping and the general arrangement of the entire plant.

The work of the course culminates in the form of an original design completely worked out and drawings made showing floor plans and detailed sections of all important parts. Text-book, Gebhardt's *Steam Power Plants Engineering*, latest edition. Seniors. First semester. Three hours.

Prerequisite: Course 2.

**6. Steam Boiler Design.** This course is almost purely design in character and dwells upon the construction and strength of pressure vessels of various types. Complete calculations and complete detailed drawings are made for the return tubular, Scotch marine and locomotive types of boilers. Text-book, Haven and Sweet *Steam Boilers and Pressure Vessels*. Seniors. Second semester. Four hours.

Required of Mechanical Engineering students.

**7. Steam Laboratory Experiments.** This course is intended to familiarize the student with the instruments and equipment

belonging to the Power Plant. Experiments are made on the steam calorimeter, steam engine, indicator, boiler-feed pump, water and steam meters, pipe insulating materials, steam gauges, recording instruments and flue gas analysis. Juniors. First semester. Three hours.

Prerequisite: Physics 3, 4, 5, 6.

**8. Heating and Ventilating.** In this course a study is made of the various methods of heating and ventilating buildings. Problems are given on the methods of calculating heat losses, removal of foul air and the introduction of fresh air.

Under Direct Heating, hot air, steam vapor and hot water systems are studied. Under Indirect Heating, attention is given to public buildings, theatres, and factories. Complete calculations and drawings for assigned buildings are required of each student. Seniors. Second semester. Four hours.

**9. Automobiles.** In this course the work taken up covers the automobile as a whole and in detail. A study is made of the passenger car, the truck and the tractor.

The text-book work is supplemented by a goodly amount of laboratory work in which cars are torn down and built up and the various parts completely analyzed. Text-book, Hobbs and Elliot *The Gasoline Automobile*. Seniors. First semester. Two hours.

Open to Engineering students.

**11. Industrial Management.** This course is intended to give the student an idea of the established methods of managing industrial plants. Various systems of following up work in the plant, classifying materials, keeping of records and dealing with labor are studied. Juniors. First semester. One hour.

Required of Mechanical Engineering students.

**Shop Work.** Under this head there are taught three branches: Pattern-Making, Foundry, and Machine Shop Practice. The work runs through the second semester of the freshman year and the entire sophomore year. The work is carried only so far as is considered necessary in order to give the student an intelligent idea as to how machinery and other articles manufactured from metals are made. No attempt is made to turn out finished mechanics, but it is considered desirable that the engineer to some extent understand the work of the mechanic.

**15. Pattern Making and Foundry Work.** In Pattern Making it is assumed that the student is familiar with the use of wood-

working tools. The work starts with the principles involved in the building of actual patterns. Allowances for draught, shrinkage, and machining are taught and the student builds patterns which he afterwards uses in the Foundry.

In Foundry Work a study is made of the composition and uses of moulding sands and other materials used about the Foundry. Green sand molds, both with and without dried cores, are made and poured. The principles of tamping, venting, gating and the various methods of delivering the pattern from the mold are studied. Attention is given to the construction, operation, and care of the cupola. The student is taught to make the molds, charge the cupola and pour his own flasks.

Pattern Making and Foundry Work must be taken at the same time.

First or second semester. Two hours.

**17. Machine Shop, General Course.** In this course the student is taught the mathematical principles of the lathe and similar machines. He is also taught how to operate the lathe, planer, shaper, milling machine and the drill press.

The lathe work starts with plain cylindrical work and advances through tapers, thread-cutting and making of cut gears. After this work is mastered the student is given instruction in laying out and other operations on the table and bench and finally he does some assembling. The shop practice is supplemented by lectures and problems. First or second semester. Two hours.

Required of all Engineering students.

**18. Machine Shop, Advanced Course.** This course is required of the Mechanical Engineering students only and is very general in character. There is no definite outline for the work, but each student is assigned such pieces to work on as his particular need may require. In many cases the piece is a repair for some bit of machinery about the University.

The course is intended to carry to a more practical point the work of the general course. Students in this course are sometimes asked to assist instructing those in the more elementary course. Sophomores. Second semester. Two hours.

**Visiting Plants.** During the latter part of the first semester of the senior year the class in steam turbines and power plants spend a week in and about Philadelphia and New York City or in the Pittsburgh district visiting plants manufacturing power machinery. When possible this inspection tour is taken at the time of the annual meeting of the American Society of Mechanical



Engineers so as to bring the students into touch with the leading engineers of the country.

This trip is required of the Senior Mechanical Engineering students and is open to all engineering students provided satisfactory arrangements can be made with the instructors in charge of their classes.

In addition to the above major tour there are several other tours made to nearby shops and industries where the students have a chance to see in a concrete way the application of the principles they are studying.

The students are not required, but are urged to make these tours. The expense of them is borne by the students themselves.

## MUSIC

Professor Stolz

1 and 2. History and Literature of Music. First and second semesters. Three hours each semester.

3 and 4. Musical Appreciation. First and second semesters. Three hours each semester.

5 and 6. Theory of Music. First and second semesters. Three hours each semester.

## PHILOSOPHY

Professor Harris

The studies in this department embrace Psychology, Philosophy, and Ethics.

1. Psychology, Descriptive and Explanatory. First semester. Four hours.

Required of Juniors for the A.B. degree.

3. Abnormal Psychology. Lectures, text-books, reading, and thesis. First semester. Three hours.

Experimental Psychology. (Biology 31). Professor Rice.

4. Philosophy of Mind. Juniors and Seniors. Second semester. Three hours.

6. History of Philosophy. Text-book and lectures. Second semester. Two hours.

Required of Juniors for the A.B. degree.

Roman Philosophy. (Latin 17). Professor Ballentine.

8. **Ethics.** Second semester. Three hours.

Required of Juniors for the A.B. degree.

10. **Ethics of Plato and Aristotle.** Study of the Republic and Nicomachean Ethics, with collateral readings and thesis. Juniors and Seniors. Second semester. Three hours.

11. **Social Ethics.** Domestic Relations. First semester. Three hours.

12. **Political Ethics.** Duties of Citizenship; Ethics of International Relations, with special reference to present day problems. Second semester. Three hours.

13. **History of Recent Philosophy.** Darwin, Spencer, and James. Juniors and Seniors. First semester. Three hours.

14. **Social Psychology.** The development of mental character in society. Juniors and Seniors. Second semester. Three hours.

## PHYSICS

Professor Simpson, Mr. Hall, and Mr. Lowry

**Physics 1. Mechanics, Heat, and Sound.** Physics 1 and 2 are designed for students who desire a general knowledge of Physics in its relation to everyday life. The work in the class room demands only a thorough knowledge of Mathematics as covered in the entrance requirements. Students who desire to teach Physics should supplement these courses with Courses 3 and 4. First semester. Two hours.

**Physics 2. Light, Electricity, and Magnetism.** A continuation of Course 1. Second semester. Two hours.

Prerequisite: Course 1.

**Physics 3. Mechanics, Heat, and Sound.** Physics 3 and 4 are designed to meet the requirements for later work in the technical courses. They are required in all the Engineering courses and pre-suppose that the student has passed the Mathematics required in these courses.

The instruction consists of lectures, recitations, and laboratory work. All important phenomena are illustrated and experimental demonstrations of the principal laws are presented. First semester. Three hours.

**Physics 4. Light, Electricity, and Magnetism.** A continuation of Course 3. Second semester. Three hours.

Prerequisite: Course 3.



**Physics 5. Electrical Measurements.** In this course the student is required to make a careful study of the instruments of precision used in electrical testing laboratories for the measurement of current, E. M. F. resistance, capacity, and inductance. A careful study is made of the standard cell and primary and secondary batteries. An exhaustive study is made of the magnetic behavior of iron. Lectures, recitations, and laboratory. First semester. Five hours.

Prerequisite: Courses 3 and 4, Mathematics 11 and 12.

**Physics 6. Heat and Light.** The theory covering the first and second laws of thermodynamics and a large number of problems are studied in the class room. The laboratory work covers the mechanical equivalent of heat; calorimetry, in which the heat value of solid, liquid and gaseous fuels is determined; a careful study is made of electrical methods for measuring temperature. In Light, the student becomes familiar with the spectrometer, spectroscope, interferometer and photometer. Students in Chemical Engineering are required to map emission spectra, study the arc and spark spectra of solids, the spark and flame spectra of liquids and gases, and the absorption spectra of mixtures and coloring materials. Students in Electrical Engineering are required to make a careful study of the efficiency of the various types of electric lamps.

All work in the laboratory is supplemented by written reports in which both general and theoretical results obtained are discussed. These reports afford the basis for criticism of the work. Recitations, lectures, and laboratory. Second semester. Five hours.

Prerequisite: Course 5.

**Physics 11. Laboratory Work in Mechanics, Heat, and Sound.** Physics 11 and 12 are laboratory courses which accompany Physics 1 and 2. They cover the entire field of Physics in an elementary way. No elaborate quantitative experiments are undertaken. First semester. One hour.

**Physics 12. Laboratory Work in Light, Electricity, and Magnetism.** Second semester. One hour.

**Physics 13. Laboratory Work in Mechanics, Heat, and Sound.** The laboratory work in Physics 13 and 14 includes experiments illustrating the general laws in all branches of Physics. The experiments are largely quantitative and use is made of instruments of precision. The work is entirely individual, the student taking notes in the laboratory which are elaborated outside and presented for criticism. First semester. Two hours.

**Physics 14. Laboratory Work in Light, Electricity, and Magnetism.** Second semester. Two hours.

## RELIGIOUS EDUCATION

Professor Wood

**1. Religion and Civilization.** The course considers the place of religion in the world's life at present, and then works back to the roots of religion in the fundamental needs of men, and in the preservation and transmission of the highest values. The religious beliefs and customs of so-called "primitive" peoples are taken up, and then a study is made of the part which religion has played in the history of the peoples who have been the great torch-bearers of civilization. Egyptian, Babylonian, Persian, Hebrew, Greek, Roman, and Oriental religions are studied; and the relation of the whole course of religious development to present religious beliefs is considered. The development of Christian civilization is briefly sketched, and the relation of Christianity to a better world-civilization is studied.

Freshmen and Sophomores. First semester. Three hours.

**2. History of American Christianity.** Such topics are taken up as the search for religious freedom in the New World, the church in colonial life, early missionary work among the Indians, religious problems of the frontier, the crusades against public wrongs, present tendencies in American Christianity, opportunities for the extension of the influence of the church, religious life outside the church.

Freshmen and Sophomores. Second semester. Three hours. Alternates with Course 4. To be given in 1925-1926.

**3. Races and Religious Contacts.** Human geography in its relation to culture and religion—the fundamental problems in the contacts and conflicts of religious cultures—the place of religion in unifying the life of the world.

Juniors and Seniors. First semester. Three hours. Alternates with Course 7. To be given in 1925-1926.

**4. The Modern Missionary Movement.** The rise of the modern missionary interest—world-wide missionary expansion—religious and social results of mission work—the influence of mission on modern history—the problem whether, and to what extent, Christianity is to be the world-religion.

Freshmen and Sophomores. Second semester. Three hours. Alternates with Course 2. To be given in 1924-1925.

**5. History and Literature of the Hebrews.** The unique contribution of the Hebrews to the religious life of mankind. Em-

phasis is placed on the study of the Old Testament literature itself.

Juniors and Seniors. First semester. Three hours.

**6. New Testament History and Literature.** The life and teachings of Jesus—the first great expansion of the church—the Christian movement in the ancient civilization in which it arose.

Juniors and Seniors. Second semester. Three hours.

**7. Religion in Modern Life.** The question how religion has been functioning in modern life is taken up, and the roots of the present situation are sought in the religious history of the Western World from the Reformation to the present time. Problems such as race antagonisms, economic and industrial relationships, and peace and war are taken up in their relation to the religious spirit.

Juniors and Seniors. First semester. Three hours. Alternates with Course 3. To be given in 1924-1925.

**8. Principles of Religious Education.** The religious capacities of children—principles that underlie the development of the religious life in the home, the church, and the community—the religious significance of adolescence—problems of later religious growth. The course is designed for those who have a definite interest in working out these problems in the home, the church, the school, and the community.

Juniors and Seniors. Second semester. Three hours.

**9. The Psychology of Religion.** A study of religious behavior and religious thinking in their relation to our experience as a whole. Application is made of the findings of psychology to the study of the religious factor in the development of personality and to the problems of religious groups and community life.

Seniors. First semester. Three hours.

**10. Organization and Methods of Religious Work.** A course for those who work, or plan to work, as ministers, teachers, or lay leaders in religious groups. Organization of religious work is related to community needs, and the place of the religious worker in community leadership is studied.

Juniors and Seniors. Second semester. Three hours.

**11. The Gospels.**

Juniors and Seniors. First semester. Three hours.

**12. The Prophets.**

Juniors and Seniors. Second semester. Three hours.

**New Testament Greek.** (Greek 7-8). Professor Hamblin.

## ROMANCE LANGUAGES

Professor Griffith, Assistant Professors Boland and Sloan,  
Mrs. Rockwell, Mr. Maldonado, and Miss Hunt

## FRENCH

1. **Elementary Course.** Grammar, easy reading, practice in writing and speaking French. First semester. Three hours.
2. **Grammar, Reading, Practice in Writing and Speaking French.** Second semester. Three hours.
3. **French Fiction, Comedy, Composition.** Increasing use of French as the language of the class room in this and succeeding courses. First semester. Three hours.
4. **French Fiction, Comedy, History, Composition.** Second semester. Three hours.
5. **The Romantic Period. The Novel to 1850.** The work in phonetics, composition, and French History is continued in this and succeeding courses. First semester. Three hours.
6. **The Romantic Period. The Drama to 1850.** Second semester. Three hours.
7. **Eighteenth Century Authors.** History of French Literature. First semester. Three hours.
8. **Seventeenth Century Authors.** History of French Literature continued. Second semester. Three hours.
9. **The Classic Drama.** First semester. Three hours.
10. **The Classic Drama.** The work in two hours of this course is arranged especially for those who are preparing to teach French. Second semester. Three hours.

## SPANISH

1. **Elementary Course.** Aims to train the students to pronounce correctly, to understand, and to use easily the simpler forms of spoken and written Spanish and to give him a small working vocabulary. First semester. Three hours.
2. **Elementary Course.** Continuation of Course 1. Introduction to grammar. Reading of simple prose. Conversation and composition. Second semester. Three hours.
3. **Intermediate Course.** Study of grammar and idiom. Prose narratives illustrative of Spanish life and surroundings. First semester. Three hours.



4. **Intermediate Course.** Continuation of Course 3. Short novels of Fernán Caballero, Alarcón, and Valdés are read for content. Translation of selected passages. More difficult grammatical problems and idiom. Introduction to the study of Spanish literature. Second semester. Three hours.

5. **Romantic Drama of the 19th Century.** Typical works will be read. Lectures on the history and characteristics of Romanticism in Spain. First semester. Three hours.

This course alternates with Course 7.

Prerequisite: Course 4.

6. **The Novel of the 19th Century.** Galdós, Valera, Pardo Bazán, and Blasco-Ibáñez are the authors read. Second semester. Three hours.

This course alternates with Course 8.

Prerequisite: Course 5 or 7.

7. **Drama of the Golden Age.—Lope de Vega.** Plays and farces will be read. Supplementary reading and reports. First semester. Three hours.

This course alternates with Course 5.

Prerequisite: Course 6.

8. **The Novel of the Golden Age.** Lazarillo de Tormes and selections from Cervantes are studied. Individual reports on assigned topics. Second semester. Three hours.

This course alternates with Course 6.

Prerequisite: Course 4.

## SOCIOLOGY

Professor Davies

1. **Introductory Sociology.** The main outlines of sociology as the general science of human society are studied, including social origins, social growth, social organization, and social activities. Freshmen and Sophomores. First semester. Three hours.

2. **Introductory Sociology.** Continuation of Course 1. The more outstanding social problems of the time are subjected to careful sociological interpretation and considered from the standpoint of social betterment. Freshmen and Sophomores. Second semester. Three hours.

Prerequisite: Course 1.

**3. Principles of Sociology.** This course deals particularly with (1) the historical development of social theory from Plato and Aristotle to the present, and (2) the study of social origins. Juniors and Seniors. First semester. Three hours.

Prerequisite: Course 1, except by special permission.

**4. Principles of Sociology.** Continuation of Course 3. A study of the method of social analysis by a detailed consideration of the geographical, biological and psychological factors in society, together with the forms of social organization. Theories of social progress are reviewed. Juniors and Seniors. Second semester. Three hours.

Prerequisite: Course 3.

**5. Social Problems.** An intensive study of the more fundamental social problems such as those of population trends, eugenics, immigration, race, the class struggle, modern family life, marriage and divorce. Juniors and Seniors. First semester. Three hours. Limited to twenty students.

**6. Social Work.** The practical principles and methods of the organized profession of social work are presented. The historical development of poor relief, penology, treatment of the sick, etc., is reviewed. Branches of modern social work discussed include family case work, child welfare, housing, public health, mental hygiene, correction, institutional administration and community organization. Juniors and Seniors. Second semester. Three hours. Limited to twenty students.

## PHYSICAL EDUCATION

### MEN

The Tustin Gymnasium has been provided for the physical training and development of young men, and is equipped with the apparatus usually found in well-furnished gymnasiums. The Director of the Gymnasium examines every student, taking and recording in a book his physical measurements, and prescribes such exercise as may be required for his physical development.

### WOMEN

Miss MacCann

Physical training is required of all women in the College during freshman, sophomore, and junior years. The course aims to give systematic, progressive exercises which tend to better the



health of the students, and to give them grace and muscular co-ordination. Swedish gymnastics, light apparatus work, folk and aesthetic dances and games are taught in four hour periods each week.

The gymnasium is equipped with wands, dumb bells, rings, Indian clubs, pulley weights, and Swedish boom and boxes. There are basket ball and volley ball courts, and equipment for indoor baseball. In September, October, and November field hockey is played, and tennis and track work are taught during April, May, and June. Outdoor sports are encouraged including skating and swimming.

All women are given two physical examinations each year to discover any physical weakness, and to prescribe individual exercises to be practiced each day. There is ample equipment in the gymnasium for these examinations.

# EXPENSES OF STUDENTS PER SEMESTER--1924-1925

## Men

Tuition and General Expenses .....	\$100.00
Unfurnished room, including heat and light.....	15.00
Furnished room, including heat, light and service..	30.00
Extra charge for corner rooms and double rooms ...	3.00
Student Budget .....	9.00

## Women

Tuition and General Expenses .....	\$100.00
Board .....	100.00
Furnished room, including heat and light.....	30.00
Extra charge for rooms in Bucknell Cottage and New Residence Hall .....	7.50
Student Budget .....	9.00

General Expenses include such charges as those for the heating, lighting and use of halls, recitation rooms and the Library. Tuition is rated at \$50 per annum.

The Student Budget is intended to cover charges for various student activities and organizations.

## Department Fees

Biology 6, 9, 13, 14, 25, 26, 28, 29, 30, 31 .....	\$ 5.00
Biology 1, 2, 7, 8, 15, 19, 21, 22.....	10.00
Biology 10, 12.....	10.00—20.00
Chemistry 1, 3, 9, 10 .....	5.00
Chemistry 5, 7, 12 .....	7.50
Chemistry 2, 4, 6, 8, 14, 15, 23, 24, 27, 28 .....	10.00
Chemistry 17, 18, 19, 20, 21, 22, 29, 30 .....	15.00
Chemistry 35, 36 .....	Special
Chemistry—Deposit .....	10.00
Electrical Engineering 14 .....	2.00
Electrical Engineering 1, 2, 9, 16 .....	5.00
Electrical Engineering 5—Deposit .....	5.00

Home Economics 13, 14, 16, 20 .....	5.00
Mechanical Engineering 9 .....	3.00
Mechanical Engineering 2 .....	4.00
Mechanical Engineering 7 .....	5.00
Mechanical Engineering 15, 17, 18 .....	6.00
Physics 11, 12 .....	3.00
Physics 13, 14 .....	5.00
Physics 5, 6 .....	8.00
Surveying 1, 4, 5, 6 .....	5.00

### SPECIAL FEES

Enrolment Deposit .....	25.00
Enrolment Deposit—Non-resident Graduate .....	15.00
Room Deposit .....	10.00
Graduation Fee for all degrees .....	15.00
Extra Hour .....	6.00
Semester Hour—Non-resident Graduate .....	3.00
Late Registration .....	3.00
Changed Registration .....	1.00
Special Examination .....	3.00

### Extra Hour

For each semester hour in excess of the minimum semester requirement for the degree for which a student is registered, a special fee of six dollars is charged if this extra hour is counted toward a degree.

### Room Deposit

Every student who applies for a dormitory room is required to send a deposit of ten dollars to the Registrar with his application, and this amount will be credited on the bill of the next semester.

It is understood that the room is engaged for the whole of the college year, and that no student can occupy a room for which he has not signed a contract.

Should a student for good reason be unable to enter or to return, the deposit will be refunded provided notice is sent to the Registrar not later than four weeks before the opening of the year for which the amount was credited.

### Payments

A deposit of \$25 for a resident student must be made at the time of enrolment before admission to any classes and the balance of the bill must be paid within thirty days after the beginning of the semester. A deposit of \$15 must be made by each non-resident graduate student at the time of enrolment.

Any student who withdraws voluntarily while in good standing, not more than two weeks after the opening of the semester, shall be charged ten per cent. of his dues for the semester.

Any student who withdraws voluntarily, while in good standing, more than two weeks after the opening of the semester shall be charged for two weeks in excess of the time from the opening of the semester to the date of withdrawal.

No refund is made to any student who is requested to withdraw on account of conduct or poor scholarship.

### Dormitory Rooms

An unfurnished room in a men's dormitory contains a bed six feet by three feet and a wardrobe.

A furnished room in a men's dormitory contains a bed six feet by three feet, a mattress, two sheets, counterpane, pillow, pillow case; wardrobe, commode, table, two chairs, and a rug. The room is cared for and the bedding is laundered.

A furnished room in a women's dormitory contains a bed six feet by three feet, a mattress, bureau, commode, wardrobe, table, two chairs and a rug.

### Board

Board is provided for women students at the Women's College. Men students can secure board at the various boarding places in town.

# GENERAL REGULATIONS

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## Attendance

Regular attendance is required upon all work in a student's course of study and at the Chapel exercises. Absences, in excess of a limited number, necessarily affect the class standing of a student. The details of the regulations in regard to absences are prescribed by the Faculty Committee on Attendance and Standing. Every student who withdraws from the University should notify the Registrar at the time of withdrawal.

## Standing

The standing of a student in each course is computed on a scale of 100 and is so reported to the Dean's Office. The report, which is sent to parent or guardian, is recorded by use of the letters A, B, C, D, E, F, I, N, X, and Abs. A, signifies a standing from 90 to 100; B, signifies a standing from 80 to 89; C, signifies a standing from 70 to 79; D, signifies a standing from 60 to 69; E, signifies a standing from 50 to 59 and a condition; F, signifies a failure; I, signifies incomplete and no requirement of a second examination; N, signifies incomplete class room work and unsatisfactory final examination; X signifies a passing grade in class room work and failure in the final examination; Abs., signifies absence from final examination.

## Degrees With Distinction

The Degree of Bachelor of Arts or of Bachelor of Science with distinction is awarded as follows:

Cum Laude. A candidate is recommended for a degree *Cum Laude* who has obtained a grade of "A" in one-half of his courses, due weight being given to the number of semester hours in each course.

Magna Cum Laude. A candidate is recommended for a degree *Magna Cum Laude* who has obtained a grade of "A" in three-fourths of his courses,



due weight being given to the number of semester hours in each course.

**Summa Cum Laude.** A candidate is recommended for a degree *Summa Cum Laude* who has obtained a grade of "A" in seven-eighths of his courses, due weight being given to the number of semester hours in each course, and who has been in residence at Bucknell University at least three years.

### Examinations

The dates of examinations are given in the calendar. In case a student fails to be present at the examination of his class, for any justifiable reason, his examination will be held at such time as the Faculty may appoint, but in no case is an examination granted a student in advance of the time appointed for the examination of the class.

Unless for very good reasons to the contrary, a student who is granted a special examination will be required to pay a fee of three dollars therefor.

### Public Worship

The College holds religious service in Bucknell Hall. The student body is divided into two sections; each section meets twice a week.

The Women's College holds also an evening service in the Main Building of the Women's College.

### Government

It is assumed that all who enter upon the courses of study in the College do so for the purpose of acquiring an education. The atmosphere of the institution is not that of arbitrary restraint, but of reasonable conformity to reasonable requirements. The College does not wish to place its stamp or bestow its honors upon any one who is not willing to deport himself as a gentleman. Each student is distinctly placed upon his manhood, and if



he abuses his privileges, after reasonable caution, he must withdraw from the institution, at the request of the President. Consistent with this ideal the students, with the sanction and cooperation of the Faculty, have organized the Senior Council composed of College men, and the Student Government Association composed of College women. Their function is to cooperate with the Faculty in maintaining the traditions and good order of the College both on and off the campus.

### **Office Hours—The President**

The President of the University is in his office in the Main College building each morning from nine to ten, if possible. Students are at liberty to call upon him at his home at any time.

### **Office Hours—The Dean**

The Dean is in his office in the Main College building during the week from 2:00 P.M. to 5:30 P.M.; on Saturday from 9:00 A.M. to 12:30 P.M.

### **Office Hours—The Dean of Women**

The Dean of Women will meet in her office College women who may desire advice or assistance from her.

### **Office Hours—The Registrar**

The office is open during the week 8:30 A. M.—12 M. and 1:30 P. M.—5 P. M.; Saturday 8:30 A. M.—12 M. The Registrar will meet students for consultation at his office.

## PRIZES

The following prizes are awarded to the students who in the judgment of appropriate committees attain the highest degree of excellence among the respective competitors, but no prize is bestowed unless a high degree of merit has been attained by the person receiving it.

### **The Prize of the Class of 1871**

A prize, established by the Class of 1871, is awarded to the member of the Freshman Class who shall prove himself best prepared for College in the two branches, Latin and Mathematics.

The prize was awarded in 1923 to Thelma Sara Stamm.

### **The Freshman Declamation Prize**

A prize is awarded to the member of the Freshman Class who shall excel in declamation at the Annual Contest of the Freshman Class.

The prize was awarded in 1923 to Thomas Burns Drum.

### **The Sophomore Prize in Public Speaking**

A prize is awarded to the member of the Sophomore Class who shall excel in public speaking at the Annual Contest of the Sophomore Class.

The prize was awarded in 1923 to William De Ruth Golightly.

### **Declamation Prizes for Women**

Prizes for the best declamation are open for competition to the Sophomore and Freshman Classes. The prize for the Freshman Class was awarded in 1923 to Isabelle Coopey Morrison.

The prize for the Sophomore Class was awarded in 1923 to Mildred Frances Walker.

### **The Gretzinger Prize**

In honor of William C. Gretzinger, A.M., the first Registrar, the University offers a prize to that member of the Junior Class who shall pronounce the best oration at the Junior Exhibition in Oratory.

The prize was awarded in 1923 to Gordon Merrill Lenox.

### **The Junior Debate Prizes**

Prizes are awarded to the two members of the Junior Class who evince superiority in debate at the Junior prize contest. No contest was held in 1923.

### **The Herbert Tustin Prizes**

In memory of his deceased son, the late Professor Francis Wayland Tustin, Ph.D., of the Class of 1856 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Tustin Prize Fund, the interest of which is to be forever paid annually as two prizes, in the proportion of fifteen dollars for the first prize, and ten dollars for the second prize, to the two students of the Senior Class who shall have attained the highest and the second highest standing in Psychology and Ethics (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception".

The first prize was awarded in 1923 to Natalie Elizabeth Musser, and the second to Alford Herbert Haslam.

### **The Herbert Goodman Barrows Prize**

In memory of his son, the Reverend William Barrows, A.M., of the Class of 1867 paid to the Trustees of the University the sum of five hundred dollars, "as the foundation of the Herbert Goodman Barrows Prize Fund, the interest

of which is to be forever paid annually as two prizes of equal amounts to the student or two students of the Senior Class who shall have attained the highest standing, respectively, in the Latin and in the Greek language and literature (under such regulations for the pursuit of these studies as the Faculty of the College shall prescribe from time to time), and whose conduct for the last two years of their course in College shall have been without exception”.

The prize for excellence in Latin was awarded in 1923 to Edgar Eugene English. The prize for excellence in Greek was awarded in 1923 to Alford Herbert Haslam.

### **The Oliver J. Decker Scholarship Prizes**

The following Scholarship Prizes are offered by Oliver J. Decker, Esq., of the Class of 1899, a member of the Board of Trustees:

A prize of twenty-five dollars to be awarded to that member of the graduating class from the departments of Arts, Biology, and Home Economics who shall have attained the highest average in the work of the entire college course, all of which must have been taken at Bucknell University.

The prize was awarded in 1923 to Frank William Summerfield.

A prize of twenty-five dollars to be awarded to that member of the graduating class from the departments of Chemical, Civil, Electrical, and Mechanical Engineering who shall have attained the highest average in the work of the entire college course, all of which must have been taken at Bucknell University.

The prize was awarded in 1923 to Clair William Halligan.

### **The Chaplain J. J. Kane Prize**

The Reverend James J. Kane, A.M., Chaplain in the United States Navy, and a graduate from the Theological

Department of this University, of the Class of 1867, established a prize which is to be given annually to that member of the graduating class who delivers the best oration on Commencement Day.

The prize was awarded in 1923 to Paul Bonyng Cooley.

### **The Bucknell Prizes for Women**

The following prizes for women were founded by William Bucknell through a gift of \$2,000. The income from this fund is to be devoted to these prizes annually in a manner more particularly defined in the donor's communication to the Trustees.

1. A Senior Prize to be awarded to the member of the graduating class of the College, who shall attain the highest grade in the studies of the four years' college course.

The prize was awarded in 1923 to Nina Grace Smith.

2. A Senior Prize, to be awarded to the member of the graduating class who, being excellent in scholarship during the Senior year, shall prepare the best essay.

The prize was awarded in 1923 to Marion Delphine Murphy.

3. A Junior Prize, to be awarded to the member of the Junior Class, who, being excellent in scholarship during the Junior year, shall prepare the best essay.

The prize was awarded in 1923 to Geneva Beatrice Gerlach.

4. A Sophomore Prize, to be awarded to the member of the Sophomore Class who, being excellent in scholarship during the Sophomore year, shall prepare the best essay.

The prize was awarded in 1923 to Ellen Virginia Scott.

5. A Freshman Prize, to be awarded to the member of the Freshman Class who, being excellent in scholarship during the Freshman year, shall prepare the best essay.

The prize was awarded in 1923 to Elizabeth Bruce Cooper.



Themes for the Bucknell Essay Prizes will be drawn from works which will be announced by the Professor of English each year.

### **The Margaret Tustin O'Hara Prize**

A prize, established by Margaret Tustin O'Hara, is awarded by a special committee to the young woman in the Senior Class who ranks highest in the qualities of Rhodes Scholars.

The prize was awarded in 1923 to Elizabeth Hurst.



## SCHOLARSHIPS

**General Regulations.** Scholarships under the control of the University are held subject to the following regulations:

1. Application for a scholarship for any college year should be made to the Registrar before the first of June of the preceding year.

2. Scholarships are held subject to semi-annual renewal, the renewal being conditioned upon the maintenance of an average grade of 80, the continuance of good behavior and the assurance of continued financial need.

3. A scholarship yields \$50.00 per year; credit for half the amount of the scholarship is given at the beginning of each semester.

4. Any student who transfers to another college must refund all scholarship money previously received.

5. A Permanent Committee on Scholarships, consisting of the President, the Dean, and the Registrar, has charge of all awards.

### FUNDED SCHOLARSHIPS

1. The William Bucknell Scholarships, twenty in number, were established by a gift of \$20,000 for the purpose of aiding worthy young men in securing an education with which to increase their usefulness in life. The income from the fund is to be paid annually to twenty young men, in accordance with rules which will be made known upon application to the committee.

2. The Longan Scholarship was established by a legacy of O. W. Longan, Esq., and is available for a student for the ministry from Lycoming County, Pennsylvania.

3. The Lewis E. Jones Scholarship was established by a legacy of the late Lewis E. Jones and is available for a student of Welsh descent.

4. The John Howard Hare Scholarship was established by the Reverend Calvin Aurand Hare, A. M., in memory of his son, John Howard Hare, and is available for a student for the ministry upon recommendation of the Pennsylvania Baptist Education Society and of the President of the University.

5. The Velola E. Hall Scholarship was established by the Reverend Henry Chandler Hall, A. M., Class of 1882, in memory of his daughter, Velola E. Hall, A. B., Class of 1904, and is available for a student in the Women's College.

6. The William V. Wilson Scholarships, two in number, were established in memory of the Reverend William V. Wilson, D. D., of New Jersey.

7. The Esther Owens Scholarship was established by a gift of Miss Esther Owens.

8. The William Albion Cook Scholarship was established by Mrs. Augusta M. Cook in memory of her son, William Albion Cook, Class of 1899, and is available for a student in the Men's College.

9. The Weaver Scholarships were established by a fund of \$10,000, the gift of Colonel Joseph Kerr Weaver, A. M., M. D., Class of 1861, and were named by action of the Board of Trustees in honor of Doctor and Mrs. Joseph K. Weaver. These scholarships are available under the rules and provide \$150 each for three students.

10. The Ministers' and Missionaries' Children Scholarships are established upon the general foundation for the benefit of the children of ministers and missionaries in active service without distinction as to religious denomination.

11. The Livingston Scholarships, twenty-two in number, established by a legacy of M. B. Livingston, and the Farwell Scholarship, established by Samuel S. Farwell, are available for students of the ministry designated by the Pennsylvania Baptist Education Society.

12. The Franklin Mathews Service Scholarships, forty in number, were established by Dr. Franklin Mathews, Class of 1868. They provide \$50 each in return for which service is required to the amount of the scholarship.

13. The Jack Culberson Kress Service Scholarships, ten in number, provide \$50 each in return for which service is required to the amount of the scholarship.

14. The Philadelphia Alumnae Scholarship was founded by the Philadelphia Alumnae Club, and is available for a woman student from Philadelphia designated by the Club.

15. The Llewellyn Phillips Medical Missionary Scholarship was established by a friend in honor of the late Professor Llewellyn Phillips, and is available for a student who aims to be a medical missionary and is worthy of the aid. The scholarship yields \$100.00 per year.

### THE LOAN FUND FOR WOMEN

In June, 1887, there was organized a society for the purpose of assisting young women of limited means to obtain an education. A fund was established by gifts from Alumnae and friends, and is controlled by an Executive Board.

The money is loaned to worthy young women who obligate themselves to return it without interest as soon after graduation as they may be able.

Applications for loans should be made to the Executive Board before the opening of each semester. No loans are granted until the applicant has been a student in the College for at least one semester.

Contributions to the Fund are solicited and should be sent to the Treasurer, Mrs. J. T. Judd, Lewisburg, Pa. A contribution of one hundred dollars constitutes the donor a Life Member of the Society.

Information will be given by the President, Mrs. Katherine B. Larison, Lewisburg, Pa., or by the Secretary, Mrs. Llewellyn Phillips, Lewisburg, Pa.

# COLLEGE ACTIVITIES

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## REGULATIONS

The College encourages and directs all activities consonant with the normal life of college students. The Faculty, therefore, has appointed a committee on student activities and has defined its duty to be:

(1) to supervise the accounting and to audit the accounts of all college organizations, non-fraternity in nature, that collect and disburse funds and whose management is not controlled by the Board of Trustees,

(2) to pass upon the scheduling of all public activities of organizations of the College not controlled by the Board of Trustees and to pass upon the scholastic eligibility of students participating in all public activities.

The treasurer of any college organization, class or committee is required to submit his accounts for audit to the committee at least once a year or as frequently as requested by the committee.

Before any public activity of those student organizations under the jurisdiction of the committee on student activities is scheduled, application for permission and a date must be made in writing to the committee. The committee on student activities has the right to prohibit a student from participating in any public activity whenever, in the opinion of the committee, such participation is detrimental to his college work.

## ATHLETIC ASSOCIATION

The Athletic Association of the College has been formed to encourage and regulate athletic sports. This Association in all its activities is subject to Faculty regulations and supervision, but considerable liberty is allowed it in carrying out its purpose. The usual intercollegiate sports are



fostered, and match games are arranged with other colleges. The general management of athletics is in the hands of a committee, consisting of the President of the Athletic Association, the President of the University, ex officio, two faculty members, chosen by the faculty or appointed by the President of the University, and twelve alumni, appointed by the Board of Trustees. The business management of the Association is in the hands of a graduate manager.

### CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association aims to maintain religious ideals and to promote religious knowledge among the men of the College. It holds regular devotional meetings and conducts Bible and mission study classes.

The Young Women's Christian Association holds regular meetings. It aims to maintain a religious atmosphere in the Women's College and it also conducts Bible and mission study classes.

### CLASS ORGANIZATION

Each class is organized with a president and the other usual officers. The classes meet for the election of officers on the first Friday of the College year at three o'clock in the afternoon. The officers thus elected serve for one year or until their successors qualify.

### DEPARTMENT CLUBS AND SOCIETIES

The medical students have organized a Medical Society. The department of Mathematics has organized the Bucknell Mathematics Club. Other departments have similar organizations. The Civil Engineering, the Chemical Engineering, the Electrical Engineering, and the Mechanical Engineering students have their respective societies. The last two are branches of national societies and

hence local members are accorded the privileges of the national bodies. All these organizations hold regular meetings. Members present original papers and at times lecturers of prominence address the societies.

## DRAMATIC, LITERARY, AND MUSICAL ORGANIZATIONS

The young women of the College have established the Frill and Frown, the young men the Cap and Dagger. Both of these dramatic organizations present each year at least one play. There is also a national dramatic fraternity, Theta Alpha Phi.

There are an association for the promotion of Inter-collegiate Debating, and a national debating fraternity, Tau Kappa Alpha.

The Lyceum has been organized to promote expression in art and literature.

There are two Glee Clubs; one composed of young men, the other of young women. They hold regular rehearsals and give concerts at the College and in adjacent cities. During the vacations the Glee Club composed of young men makes tours.

## FRATERNITIES

No student is permitted to join a fraternity until he has received a certificate from the President of the University, under seal, that he has been a student for one year in the College, that he has completed one year's work and that his conduct has been satisfactory. However, a student who has completed one year's work at another college may join



a fraternity at the close of the first semester, provided his conduct has been satisfactory.

## STUDENT PUBLICATIONS

The students of the College publish a weekly paper, the *Bucknellian*, and a daily *Commencement News* during Commencement Week. The Junior Class publishes every year an annual, *L'Agenda*; the Y. M. C. A., publishes *The Handbook*.

# THE SUMMER SESSION

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## FACULTY OF THE SUMMER SESSION OF 1923

G. C. L. RIEMER, Ph.D.

Dean of the Summer Session

State Department of Public Instruction, Harrisburg

NELSON P. BENSON, Ph.D., Lock Haven

Superintendent of Schools of Lock Haven

EMORY O. BICKEL, Ph.D., Mifflinburg

Superintendent of Schools of Union County

HENRY THOMAS COLESTOCK, Ph.D.

Professor of History

FRANK G. DAVIS, A.M., Cleveland, Ohio

Principal of the Detroit Junior High School

NELSON FITHIAN DAVIS, Sc.D.

Professor of Biology

HARRY SCHEIDY EVERETT, Ph.D.

Associate Professor of Mathematics and Astronomy

OREL SAMUEL GRONER, Sc.M.

Professor of Biological Chemistry

GEORGE B. LAWSON, A.M., D.D.

Professor of Education

CHARLES LOSE, A.M., Williamsport

Formerly Superintendent of Schools of Williamsport and

Principal of the State Normal School at Lock Haven

D. MONTFORT MELCHIOR, A.M., Philadelphia

Supervisor of High School Instruction, Girard College

CARL MILLWARD, A.M., Milton

Superintendent of Schools of Milton

GEORGE FRED RASSWEILER, A.M., B.D., B.O.

Professor of Public Speaking

FRED W. ROBBINS, Ped.D., Williamsport

Superintendent of Schools of Williamsport

FRANK MORTON SIMPSON, Sc.M.

Professor of Physics

PAUL GEORGE STOLZ, A.M.

Director of the School of Music

DAVID EARL MOYER

Assistant Professor of Music

CHARLOTTE GUION ARMSTRONG

Instructor in Music

ANNA MARTHA PINES

Instructor in Music

The Summer Session of 1924 will commence Monday, July 7 and continue until Friday, August 15.

### **Requirements for Admission**

No formal requirements for admission are made except ability to do the work of the courses for which the student is registered.

### **Credits**

All courses offered in the Summer Session are of collegiate grade and carry college credit. Students, however, who desire to become candidates for degrees must satisfy the College admission requirements before credit toward a degree will be granted. Regular students of the College will receive credit toward graduation for work completed in the Summer Session. Opportunity will also be afforded to take work toward the Master's degree; all courses must have the approval of the head of the department in which the major is chosen and of the Committee on Advanced Degrees. During the Summer Session not more than six credit hours may be gained by an undergraduate nor more than eight credit hours by a graduate student.

### **Tuition**

The general tuition fee is \$35.00. An auditor's fee of \$5.00 per semester hour is charged those who are not working for credit.

### **Courses of Instruction**

Courses were offered in the following subjects in the Summer Session of 1923: Biology, Chemistry, Economics and Political Science, Education, English, History, Latin, Mathematics, Philosophy, Physics, Psychology, Romance Languages, and Music.

All correspondence relating to the Summer Session should be addressed to The Secretary of the Summer Session, Bucknell University, Lewisburg, Pa. A special Bulletin and detailed information concerning the Summer Session of 1924 may be obtained on request.

# THE EXTENSION DIVISION

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## General Information

The organization of the Extension Division represents a systematic effort to bring some of the facilities and advantages for culture and instruction within the college halls to people who are unable to enter upon a full-time resident course.

## Admission

Anyone who can do the work may enter any course. There is no examination for admission.

## Students

Courses are available for the following classes of students:

- 1 Normal School graduates working toward the Bachelor's degree in Education
- 2 High School graduates who wish to pursue a regular course leading to the Bachelor's degree in Arts or Science
- 3 Graduate students working toward the Master's degree
- 4 Students preparing for college entrance
- 5 Teachers seeking professional advancement or qualifying for state certification
- 6 Those who wish to study certain subjects for pleasure or profit
- 7 College students making up deficiencies or accelerating their college course

## Instructors

The instructors conducting courses in the Extension Division are resident members of the University faculty or non-resident members of the Extension faculty.

## Calendar and Hours

Extension courses meet once a week for two hours through a semester of fifteen weeks.

1923-1924 First semester begins Saturday, September

1923-1924	Second semester begins Saturday, February 2
1924-1925	First semester begins Saturday, September 27
1924-1925	Second semester begins Saturday, February 7

### Credits

Unless specifically stated, all courses carry full college credit. College credit can be granted, however, only after the regular entrance requirements are met. Students seeking such credit should notify the Director of the Extension Division at the beginning of the course.

### Tuition

Tuition for all extension courses, regardless of location, is charged at the rate of \$7.50 per semester hour. The tuition for each semester is payable in advance to Bucknell University.

### Extension Classes

Classes outside of Lewisburg are given wherever there is sufficient demand. During the first semester of the academic year 1923-24 such courses were given by the Education, English, Mathematics, and Science Departments at Lock Haven, Milton, and Williamsport. Saturday classes meet throughout the year at Lewisburg.

### How to Organize an Extension Class

Any individual or group of individuals may organize a class at any time. Courses are available to industrial and business organizations, to societies and clubs, to boards of education, superintendents and teachers of schools, and to professional groups. The course or courses desired by the group should be selected, the registration secured, and a suitable time and place of meeting arranged. A local secretary is usually appointed to make these arrangements and to collect the fees. A nominal fee is paid for this service. The minimum enrolment for which a course can be given varies with the distance from Lewisburg. For places near Lewisburg the minimum is 25. A letter to the Director of

the Extension Division will bring every assistance in completing the arrangements.

### Courses

The usual college and graduate courses are available in the regular departments of the College. Special courses may be arranged to meet the particular needs of the group applying for them. The Saturday courses offered at Lewisburg are arranged sequentially so that students can begin in any semester a program which extends through two or more years and which represents considerable progress toward a degree.

### Correspondence

Address all correspondence to The Director of the Extension Division, Bucknell University, Lewisburg, Pa.



# SEVENTY-THIRD ANNUAL COMMENCEMENT

MONDAY, JUNE ELEVENTH 1923

## DEGREES CONFERRED

### Bachelor of Arts

Dorothy Auer  
Marion Ayars  
Mary Ethel Bailey  
Constance Huntting Bennett  
Raymond Rearick Beyer  
Olive Winifred Billhime  
Charles Richard Birch  
Arda Crawford Bowser  
Cornelia Ruth Boyd  
Jessie Kesson Brookes  
Charles Theodore Bunting  
Willard Douglass Callendar  
Lyell Carr  
Joy Pross Carulla  
Donald Bryan Cloward  
Edmund Pearre Coe  
Carlotta Harriet Conrad  
Paul Bonyng Cooley  
Earl DeCoursey  
Margaret Dewees  
John Joseph Dietrich  
Frieda Eva Ebner  
Edgar Eugene English  
Hazel Marie Farquhar  
Anna Marie Fisher  
Howard Nangle Fry  
Francis Howard Gibson  
Elmer John Gray  
Lucille Anita Gutelius  
Elinor Solly Hanna  
Perilla Ravina Harner  
Jennie Margaret Harrington  
Alford Herbert Haslam  
Mary Gertrude Heilman  
Ethel Mary Henry  
Walter Liddell Hill  
Frank Warren Homan  
Florence Elizabeth Horam  
Elizabeth Hurst  
Lewis Leroy Hutchinson  
Marion Aletha Jack  
Jean Pearl Johns  
George Hadfield Jones  
Alvin Fred Julian

Frances Dorando Keough  
Helyn May Kerstetter  
Edith Leone Kieser  
Lawrence Myron Kimball  
Kathryn Chance Kimble  
John Carlisle Koch  
George Washington Lewis  
Vivian Beatrice Livingston  
Harold Charles McGraw  
Everitt Samuel McHenry  
Miriam Markham  
Robert Markowitz  
Alice Pearl Minch  
Benjamin Stanley Moore  
Margaret Morgan  
Mabel Eckert Mulock  
Marion Delphine Murphy  
Natalie Elizabeth Musser  
Thomas McKinley Musser  
George Reading Rentz  
Ruth Adele Reuhl  
Samuel Harmer Rickard  
Alma Winifred Royer  
Martha Marie Shafer  
Dorothy Broome Sholl  
Pennell McCoy Shumaker  
Margaret Elizabeth Smail  
Bertha Louise Smith  
Nina Grace Smith  
Wesley Edward Smith  
Anna May Speare  
Jennie Ethleen Stackhouse  
Frank William Summerfield  
Edna Tompkins  
Kathryn Franian Wainright  
Isabella Reinhardt Webster  
Dorothy Frances Wilhelm  
George Carbon Wolfe  
Glenn Wesley Wolfe  
James Marsea Wood  
William Guy Woodring  
Charles Russell Decker Yearick  
Gail Borden Young

## Bachelor of Science

Harold Raymond Bair  
as of the class of 1921

Michael Joseph Maggio  
as of the class of 1921

## Bachelor of Science in Biology

Eugene Stull Biddle

Leicester Hipple Horam

Gladys Emrick

Anna Horoschak

Andrew Martin Gehret

John Straw Purnell

Paul Edward Harding

Elmer Lee Reiter

William John Thomas

## Bachelor of Science in Chemical Engineering

Cleon Ferris Buck

Arlington Reuben Lewis

Ellis Warren Deibler

Kenneth Aldrich Lowry

Joseph Harlyn Fulmer

Paul Carew Mallay

John Jacob Hellewell

Luther Frederick Miller

Miles Henninger

Dewey William Morrett

Daniel Walker Holloway

Katherine Lucile Owens

Alfred Voris Jacobs

Walter Blanchard Shaw

## Bachelor of Science in Civil Engineering

Victor Augustin Bihl

Harry Walter Jones

Worthington Candrick

Charles William Miller

Donald Alderdice Davis

Norman Watkin Morgan

Robert Mitman Dawson

Lloyd Custer Palmer

Carl Frank Goerlitz

Richard William Sheffer

Delzell Melvin Griffith

Earl Emmanuel Sousley

Henry LeRoy Heller

as of the class of 1922

## Bachelor of Science in Electrical Engineering

John Alexander Ammerman

Richard Kelly Hutchison

Ellsworth Kede Caldwell

James Hayes Jolly

Nelson Fithian Davis, Jr.

Earl Balliet Mickley

Eli Raymond Strunk DeTurk

Robert Elven Ross

Stuart Albright Epler

David Arthur Sangston

Lloyd Charles Fry

Donald Rylance Smith

Enoch Anthony Gdaniec

George Washington Sour

William George Gehring

Joseph Homer Steele

Byron William Hahn

Charles Leonard Steiner

Clair William Halligan

Rupert Morris Swetland

Cyrus Hoffa

Frank Cort Wright

## Bachelor of Science in Mechanical Engineering

Frank Stanley Bartoszewicz

Jacob Henry Kutz

Harry Miller Calhoun

Vernard Elmer Lozier

Frank Bernard Daniels

Luke Lincoln Stager

John Anderson Davis

Harold Womer Tench

Robert Joseph Hartlieb

Haydn James White

Stanley Vincent Kostos

Foster Charles Wilson

Herbert Oscar Wilson

## Bachelor of Science in Home Economics

Bertha Ella Cupp  
Helen Jean Ferguson  
Elva Berniece Flanagan  
Mary Elizabeth Grove  
Mildred Alice Hayden

Anna Margaret Lees  
Ruth Ellen Leitzel  
Geraldine Schmucker  
Elsie Donaldson Schuyler  
Harriet Wallower Swartz

## Master of Arts

Mary Barrick Beatty, B.S.  
Alfred Lee Carey, B.S.  
Isaac Newton Earle, A.B.  
John Frederick Jeffery, B.S.

Mary Belle Lees, A.B.  
Marion Riess, A.B.  
Chester Franklin Schroyer, A.B.  
Ruth Stein, A.B.

Ruth Hanna Wolfe, A.B.

## Master of Science in Biology

Reba Eva Mackenthun, B.S.

## Master of Science in Electrical Engineering

Welles Norwood Lowry, B.S.

## Civil Engineer

Harry Edmund Bilger, M.S.

Arthur Sawyer Mahoney, B.S.

## Mechanical Engineer

Clarence McClay Kriner, B.S.

Louis Walton Siple, B.S.

## DEGREES WITH DISTINCTION

## Summa Cum Laude

Frieda Eva Ebner  
Perilla Ravina Harner

Kathryn Chance Kimble  
Nina Grace Smith

Frank William Summerfield

## Magna Cum Laude

Constance Huntting Bennett  
Edgar Eugene English

Clair William Halligan  
Alford Herbert Haslam

## Cum Laude

Mary Ethel Bailey  
Olive Winifred Billhime  
Charles Richard Birch  
Joy Pross Carulla  
Paul Bonyng Cooley  
Frank Bernard Daniels  
Ellis Warren Deibler

Margaret Dewees  
Hazel Marie Farquhar  
Howard Nangle Fry  
William George Gehring  
Delzell Melvin Griffith  
Ethel Mary Henry  
Daniel Walker Holloway

Elizabeth Hurst  
Alfred Voris Jacobs  
Harry Walter Jones  
Edith Leone Kieser  
Everitt Samuel McHenry  
Miriam Markham  
Margaret Morgan  
Natalie Elizabeth Musser

Katherine Lucile Owens  
Martha Marie Shafer  
Dorothy Broome Sholl  
Bertha Louise Smith  
Jennie Ethleen Stackhouse  
Isabella Reinhardt Webster  
Foster Charles Wilson  
George Carbon Wolfe

## HONORARY DEGREES

---

### Doctor of Laws

John Hope  
James Simmons Swartz  
Charles Bobb Witmer  
Adam Martin Wyant

### Doctor of Science

Harold Newton Cole

### Doctor of Divinity

Charles Way Harvey  
Charles Scull Keen

# STUDENTS

## GRADUATE STUDENTS

Harry Scheidy Everett, A.B. 1912, A.M. 1913, Sc.M. 1914, Ph.D. ( <i>Chicago</i> ) 1922	Lewisburg
Ruby Malone Freeble, A.B. ( <i>The Western</i> ) 1920	Watsonstown
Clair William Halligan, B.S. in E.E. 1923	Ephrata
Marjorie Josephine Rivenburg, A.B. ( <i>Wellesley</i> ) 1923	Lewisburg

## SENIORS: CLASS OF 1924

Name	Address
Edward Thomas Ashman	Nanticoke
Earl Jacob Axe	New Cumberland
George Bellak	Johnstown
Louise Morgan Benshoff	Johnstown
Eleanor Ruth Berry	Mifflinburg
Dorothy Jane Bissell	Rochester, N. Y.
Glenn Richard Bower	Berwick
Henry William Bressler, Jr.	Sunbury
Edward Bridges	Palmyra, N. J.
Mildred Alice Brown	Meshoppen
Mary Anna Brownmiller	Shoemakersville
Charles Kenneth Budd	Budd Lake, N. J.
John Dwight Butzer	Smethport
Earl Keays Carpenter	Jamestown, N. Y.
Jennie Elizabeth Clark	Mahaffey
Mildred Louise Clayton	Meshoppen
Mary Mildred Clower	West Chester
Kenneth Lorne Cober	Jeannette
Merl Greene Colvin	Forest City
Adolpho Concha-Goubert	Bogota, Columbia
Daniel Allen Copenhaver	Hershey
Anna Mary Coyne	Philadelphia
Rose Olive Curtis	Waymart
Charles Frederick Dandois	Jersey Shore
Florence Turner Dare	Bridgeton, N. J.
Ethel Muriel Davis	West Chester
Cecil Preston Dawson	Watsonstown
Ellis Roy Defibaugh	Wilkesburg
Hilda Bernitice DeWitt	Sunbury
Iva Irene DeWitt	Sunbury
Charles Weiser Dinger	Reynoldsville
Chester Arthur Drenning	Wrightsville
Earl Sylvester Dunlap	Montoursville
Helen Kathryn Dunsmore	Philipsburg
Mary Lillian Edmunds	Pittsburgh
Mary Emily Eisenmenger	Williamsport
Frank Fremont Elliott	Parker's Landing
Carl August Erickson	Great Neck, N. Y.
Mildred Louise Evans	Wilkes-Barre



## Name

## Address

Margaret Ellen Everitt	Allenwood
Helen Evelyn Fairfax	Williamsport
George Austin Fishel	Pittsburgh
Helen Gertrude Fisher	Lewisburg
Ralph Rhinesmith Fleming	Nutley, N. J.
Helen Adelaide Fowler	Watsontown
Charles Raymond Freeble	Watsontown
LaRose Hyacinth Gemmill	Windsor
Geneva Beatrice Gerlach	Hazleton
Henry Anson Glover, Jr.	Nichols, N. Y.
Olga Amalie Goerdel	Mifflinburg
Robert Russell Gray	Bradenville
Miriam Herr Haldeman	Malvern
Walter James Hall	Shamokin
Lois Hall Hamblin	Lewisburg
Ellery Hale Harvey	South Williamsport
Robert Christian Heim	Lewisburg
Ida Roberta Heller	Williamsport
Floyd Grove Hempt	New Cumberland
Herbert William Henning	Dunkirk, N. Y.
Anna Stewart Heysham	Norristown
Earl Wilson Hill	Lewisburg
Stephen Andrew Hodoba	Mt. Carmel
Henry Walter Holter	Howard
Elliott Stephens Hopler	Bartley, N. J.
Thomas Ignatius Horan	Locust Gap
Mildred Elizabeth Houseman	Altoona
Roland Ogilvie Hudson	Lansdale
Harold Steiner Hunsicker	Ada, O.
Charles Grover Hyman	Winfield
Effie Claire Ireland	Jeannette
Foster Duncan Jemison	Princeton, N. J.
Donald Miles Johnson	Lewisburg
Ruth Irene Johnson	Lewisburg
Harold Jones	Wilkes-Barre
Thomas William Jones	Plymouth
William Lambert Joseph	Youngwood
Donald Bruce Keim	Danville
Clyde Ernest Kelly	Scottsdale
Adelaide Louise King	Plainfield, N. J.
Eleanor Grant Kingsbury	Holyoke, Mass.
Peter Francis Kinyoun	Penn Yan, N. Y.
Albert McKinley Kishbaugh	Nesquehoning
John Koblish	Plymouth
Russell Maurice Kostenbauder	Aristes
Mary Catherine Lape	Johnstown
Raymond Hilding Larson	Port Allegany
Gordon Merrill Lenox	Oakmont
John Eustace Lenox	Oakmont
Geddy Gilbert Lesaius	Inkerman
Harold Smedley Liddick	Lewisburg
Charles Frederick Lindig	Lewisburg
Mary Taylor Llewellyn	Avoca



Name	Address
Helen Elizabeth Lockard	Johnstown
George Walter Long	Ardmore
Curtis Milton Lowry	Uniondale
Robert William Machamer	Lewisburg
Galen Stuart McInroy	Middlebury Center
Arthur John McMurtrie	Muncy
Sara Elizabeth Manahan	Harrisburg
Maggie Martin	Pittston
Florence Margaret Martz	Washingtonville
Mildred Megahan	Williamsport
Wayne Samuel Mengel	Shamokin
Elizabeth Voris Moore	Watsonstown
David Wendell Morgan	Franklin
Charles Archibald Munro	Rossiter
Henry Benjamin Mussina	Williamsport
Malcolm Vivian Mussina	Williamsport
Harry Virgil Overdorff	Johnstown
Earl Emery Owens	Hemlock, N. Y.
Henry Mark Parmley	Mahanoy City
Mary Ruth Peck	Pittsburgh
Mary Elizabeth Peifer	Wilkes-Barre
Grayce Esther Peterson	Monessen
Ruth Porter	Oil City
Joseph Harlan Powell	Downingtown
Ruth Dorothea Raker	Allentown
Mary Elizabeth Rakestraw	Williamsport
Karen Nörholm Rasmussen	Perth Amboy, N. J.
Gerald Mark Rassweiler	Lewisburg
William Daniel Reitz	Lewisburg
Ralph Wallace Richards	Philadelphia
Edwin David Robb	Howard
Lillian Alice Roberts	Germantown
Henry Tracy Rockwell	Monroeton
Sara Alice Ruhl	Lewisburg
Jefferson Verne Sangston	McClellandtown
Harold Luther Schaefer	Cogan Station
Clarence Merrill Shaffer	Latrobe
Myrtle Gertrude Sharp	Flemington, N. J.
Luella Frank Shortess	Montandon
Margaret Jean Smith	Paterson, N. J.
James Jackson Snyder	Winfield
Oliver Thomas Somerville	Rutherford, N. J.
Lester Clearman Stanton	Waymart
Rachel Marie Steckel	Slatington
Margaret Bower Steely	Lewisburg
Mary Anne Fulton Stephens	Johnstown
Percy Kenneth Steventon	Nesquehoning
Mary Pauline Stocker	Milton
Alice Eleanor Stokes	Montgomery
Alfred Gordon Stoughton	Jeannette
Evelyn Kedzie Strauser	Williamsport
Elma Virginia Streeter	Williamsport
Milton Jones Stringer	Philadelphia

Name	Address
Florence Beatrice Supplee	Northbrook
Paul Rufus Sweitzer	Plymouth
Stephen Terpak	Simpson
Milton Edgar Trainer	Paulsboro, N. J.
Elizabeth Turner	Nanticoke
Aimee Angella Unverzagt	Harrisburg
Archibald Myglis Van Blarcom	Paterson, N. J.
Daniel Maneval Villinger	Williamsport
Elizabeth Margaret Wagner	Smithton
Elizabeth Sanford Walker	Farmingdale, N. J.
Prudence Lunetta Walters	Lewisburg
Martha Wilifred Watkins	West Pittston
Mary Elizabeth Weeter	Sunbury
Ruth Hamilton Weidenhamer	Lewisburg
Evelyn Mae Weidensaul	Lewisburg
Jessie Read Wendell	Philadelphia
Frank John Widemire	Bradford
John Tilden William, Jr.	Yeagertown
Ebenezer David Williams	Nanticoke
Merritt Bingham Wilson	Mount Holly, N. J.
Wendell Holmes Woodside	Clearfield
Albert Gould Zimmerman	Pittston
Fred Thomas Zimmerman	Shamokin

## JUNIORS: CLASS OF 1925

Name	Address
Margaret Dorothy Ackerman	Erie
Howard Edwin Ackman	Port Allegany
Morris Seiler Ames	Watsonstown
Eunice Elvira Andersson	Lewisburg
Franklin Davis Arnold	Lewisburg
Frank Eldon Baker	Wellsboro
Leslie Earl Baker	Espy
Louise Esther Barnes	Kingston
Catherine Simpson Baxter	Allenwood
Hulda Jeanette Baxter	Downsville, N. Y.
Mary Louisa Baxter	Downsville, N. Y.
George Hodge Beale	Oakmont
Albert Addison Behling	Pitman, N. J.
Dorothy Naomi Follmer Berkheimer	Watsonstown
Mildred Pearl Biddison	Malvern
Charles Frederick Bird	Jeannette
John Cooper Bird	Shamokin
Robert Charles Bixler	Hanover
Neal Shaw Blaisdell	Honolulu, Hawaii
Charles Beckwith Boone	Harrisburg
Charlotte Evans Bosler	Johnstown
Robert Greenleaf Brandt	Pittsburgh
Mary Phoebe Bray	Freeland
Elinor LaRue Breisch	Ringtown
Warren Franklin Breisch	Catawissa

Name	Address
John Paul Bressler	Donaldson
Doris Merle Brininstool	Clarksburg, W. Va.
Myron Antony Brognard	Manasquan, N. J.
Leon Clayton Bubeck	Schuylkill Haven
John Buchovecky	Johnstown
Clifton Leon Buckley	West Chester
Max William Bussom	Williamsport
Mark Selden Butler	Thompson
Joseph Howard Carson	Parkesburg
William Hall Challis	Wilkes-Barre
Lawrence Rondell Cherrington	Bloomsburg
Robert John Clingerman	Pittsburgh
Katherine Quay Clush	Sunbury
William Henry Colestock	Lewisburg
Wilbur Wingert Cook	Lewisburg
Fred Wilson Cozadd	Sharon
Charles Tice Crosier	Salem, N. J.
Roland Clark Cunningham	Ocean City, N. J.
Edwin Jacob Davies	Nanticoke
Alice Vivian Davis	Olyphant
Frances Moore Davis	Lewisburg
Myron Franklin Decker	Williamsport
LeRoy Shaffner DeMart	Tyrone
Roena May Dock	Lewisburg
Willis Sylvester Drake	Vandergrift
William Oscar Duck	Lewisburg
Leiser Oliver Eisenhauer	Lewisburg
Earle Edward Ellis	Watsonstown
Stephen Chapman Emmanuel, Jr.	Wilkes-Barre
Harry Hovlacher Engle	Dalmatia
Donald Opp Eschbach	Milton
William Chester Evans	Homestead
George Richard Faint	Roselle Park, N. J.
James Wallace Foster	Oakmont
Mildred Cornelia Francisco	Great Notch, N. J.
Allan Horton Frank	Sugargrove
Frank Lincoln Frost, Jr.	Cleveland, O.
Gertrude Gardner	Carbondale
Joseph Roseberry Gardner	Hackettstown, N. J.
Harriet Kathryn Glase	Lewisburg
William DeRuth Golightly	Lewisburg
Grace Eleanor Lee Good	Watsonstown
Harold Israel Grice	Scranton
Ruth Irene Grove	Lewisburg
Ralph Semans Hagan	Uniontown
Thomas Michael Hammond	Reynoldsville
Elizabeth Julia Harman	Montgomery
Albert Henry Harris	Millville, N. J.
Elizabeth Kathryn Hartranft	Montgomery
Wildon Taylor Harvey	Coatesville
Francis Haskett	Trenton, N. J.
Frank Robert Heiser	Mahanoy City
Andrew Hendrickson	Pedricktown, N. J.

Name	Address
George Theodore Henggi	Oakmont
Wilbur Sterling Hennen	Fairmont, W. Va.
Donald Elder Henry	Apollo
Thomas James Henry, Jr.	Apollo
Theodore Heysham, Jr.	Norristown
Lillian Higgins	Flemington, N. J.
Anne Lucile Hobensack	Philadelphia
James Jones Holsing	Canonsburg
Reuben Benjamin Houston	Apollo
Helen Jessie Hower	Mt. Union
Austin Lawton Huffman	East Stroudsburg
Eleanor Clair Hunt	Williamsport
Rebekah Viola Hunter	Spring City
Marshall Hammond Irvin	Lewisburg
Coral Emma Jack	Wayne, N. J.
Margaret Rodgers James	Allentown
Emerson Jenkins	Scranton
Albert Williams Johnson, Jr.	Lewisburg
Evan Malbone Johnson	Lewisburg
Allen Franklin Jones	Mt. Carmel
Frank Lydick Jones	Punxsutawney
Martha Jane Jones	Pittston
Carl Gailard Kapp	Watsontown
Ruth Keebler	Freeport
Walter LeRoy Keyser	Montoursville
Lee Kissinger	Sunbury
Carl Henry Kivler	Nanticoke
Carroll Keiser Kline	Lewisburg
Lowell Edgar Krebs	Colegrove
Sarah Elizabeth Kredel	Johnstown
John Huffner Lauder	Ridgway
Charles Hubert Leehan	Pittston
George Franklin Bell Lehman	Williamsport
Eleanor Heim Little	Picture Rocks
William John Llewellyn	Wilkes-Barre
Ruth Elizabeth Lupold	Sunbury
Robert Holt McBride	Paterson, N. J.
William Charles McFarland, Jr.	Parkesburg
Anna Marian McInay	Gordon
Murdo James MacKenzie	Philadelphia
Roye Miller McLane	Lemoyne
Kenneth Earl McMurray	Wilkinsburg
William Vickers Mahaffey	Oakmont
Ruth Burdette Mandeville	Caldwell, N. J.
John Bennett Marlin	DuBois
Mario Valentine Martin	Coudersport
Grace Valeria Matz	Shillington
Mary Agnes Mayes	Milton
Mildred Lucile Meixell	Lewisburg
Margaret Beatrice Mettler	Elysburg
Raymond Hall Miller	Salem, N. J.
Rebecca Pearl Milliken	Lewisburg
Thomas Buckworth Mills	Wyoming



Name	Address
Harry Theodore Moore	Reynoldsville
Helen Elizabeth Morton	Woodcliffe, N. J.
Ralph Eugene Mucher	Wiconisco
Franklin Benard Myers	Pottsville
John Edward Namisniak	Nanticoke
Wilson Rittenhouse Neisser	Philadelphia
Wanda Coates Nicol	Archbald
Kermit Levan Noll	Zion
William Painter	Tampa, Fla.
James Nelson Patterson	Onnalinda
Chester William Patton	Parker's Landing
Albert Ray Pechan	Ford City
Helen Gertrude Peifer	Wilkes-Barre
Amos Vastine Persing, Jr.	Allenwood
Warren Elias Pinner	Camden, N. J.
Clara Ellen Price	Linden
Clifford Hough Reed	Lock Haven
Harold Earl Reed	Juniata
John Maxwell Reed	Lewisburg
Roslyn Thomas Reed	Norton, Va.
William Arthur Rees	Pawtucket, R. I.
Phoebe Margaret Reinhart	Milton
Mary Dorothy Repogle	Johnstown
George Findley Riddile	Oakmont
Charles Gerald Rishell	Emporium
Harold Franklin Roles	Juniata
Alice Evans Rossiter	Norristown
Harry Rutter	Northumberland
Vera Sackett	Downsville, N. Y.
Alice James Savage	Haddonfield, N. J.
Dollie Norelle Schaffner	Falls Creek
Mary Susan Schilling	Bradford
Charles Luther Schulz	Pottstown
Mary Elizabeth Seidel	Milton
George Allen Sensenbach	Sunbury
Robert Barnes Shaffer	West Chester
Herbert William Slack	Sunbury
Robert Daniel Smink	Shamokin
James Aitken Smith	Knoxville
Carry Catharine Smithgall	Montoursville
Dorothy Stabler Snyder	Altoona
Johannetta Snyder	Mahanoy City
Louis Walter Sobray	Mt. Pleasant
Archie Rudolph Spangler	Bradford
Clair Grove Spangler	Lewisburg
Sara Elizabeth Spotts	Milton
Kathryn Rebecca Steckman	Roanoke, Va.
William Samuel Stephens	Johnstown
Walter Arthur Stevens	Friendship, N. Y.
Ralph Mattern Stine	Tyrone
Martha Catherine Swartz	Lewisburg
Sylvia Eliza Tanner	Milton
Alan Weisel Tarr	Princeton, N. J.

Name	Address
Warren Edward Thamarus	Leighton
Albert Thomas	Blakely
Howard Fayette Clark Thomas	Lewisburg
William George Thomas, Jr.	Nanticoke
Frank Sankey Turner	Munhall
Emily Van Dyke	Sunbury
Esther Elizabeth Vonada	Lewisburg
Howard Watson Wagner	Waymart
Frank Edwin Waldner	Ashland
Mildred Frances Walker	Farmingdale, N. J.
Paul Newton Walker	Verona
John Arthur Walter	Claysburg
Sara Dudley Walton	Moorestown, N. J.
Joseph Thomas Washleski	Shamokin
Melrose Edmund Weed	Reynoldsville
Helen Weidenhamer	Milton
Robert Allen West, Jr.	Ashley
Charles Frederick White	Olyphant
Theodore Addison White	Warren
Wilfred Whitman Wilcox	Knoxville
Edward Gilbert Williams	Milton
Harry Williams	Nanticoke
Anthony Karl Wilsbach	Harrisburg
Carl Kline Wolfe	Allentown
Paul Jennings Woodring	Reynoldsville
Kenbi Yamamoto	Yokohama, Japan
Ronald Baker Yothers	Pitcairn
Robert John Young, Jr.	Snow Shoe
Jacob Edgar Zortman	Lewisburg

## SOPHOMORES: CLASS OF 1926

Name	Address
Frederick Ritts Amsler	St. Petersburg
Charles Eugene Anderson	Reynoldsville
Theodore Fairbanks Angus	Altoona
Paul Ridington Austin	Phoenixville
Francis Earl Bach	Plainfield, N. J.
Floyd Jay Bailey	Nicholson
Guy Wesley Bailey	Nicholson
Eleanor Longdon Bair	Oakmont
Charles BaThein	Rangoon, Burma
Wayne Lamotte Battin, Jr.	West Chester
Ruby Irene Bell	Nanticoke
Allan Elmer Billman	Mt. Carmel
Harry Field Bird	New Albany
Robert Alexander Black	Harrisburg
Lelia Emma Bower	Williamsport
Stewart Ferdinand Brewen	Ashland
Anna Lutz Brown	Pitman, N. J.
Frank Henry Brown	Brookville
William Harold Browne	Burnside



Name	Address
John DeWitt Budd	Budd Lake, N. J.
Edgar Houseman Butler	Clearfield
Rolland McCurley Campbell	Allenwood
Antonio Canto	Merida, Yucatan, Mexico
Josiah DuBois Carll	Salem, N. J.
Eugene Debs Carstater	Mill Hall
Leonard James Coates	Allentown, N. J.
Marian Gertrude Coe	Factoryville
Carlton George Coleman	Hancock's Bridge, N. J.
Grace Cutting Cooley	Lewisburg
Arland Fred Cooper	Knoxville
James Lemoyne Cornely	Madera
Theron Austin Cramer	Shamokin
Mary Elizabeth Cunningham	Vineland, N. J.
Juanita Curtis	Waymart
Louise Gladys Curtis	Waymart
Raymond Gilbert Daggs	Coraopolis
Frederic Bard Davies	Scranton
John Norman Davies	Wilkinsburg
Morgan Samuel Davies	Reading
Randall Leland Davis	Cleveland, O.
James Courtney Denton	Rochester
Fred Carter Dixon	Hudson
Adelbert Walter Doe	Millbury, Mass.
John Richard Dowd	Honesdale
Thomas Burns Drum	Lewisburg
Charles Elgin Dunmire	Duquesne
Rolland Nelson Dutton	Buffalo, N. Y.
Asa Tingley Eaton	Harrisburg
Raymond Horace Edwards	Bloomsburg
Vera Lorraine Eister	Hamburg, N. J.
Gladys Ely	Hightstown, N. J.
Frederick William Evans	Kingston
Helen Gladys Everitt	Lewisburg
James Michael Leon Fallon	Danville
Helen Mary Falstick	Clearfield
Charles Taylor Farrow, Jr.	Haddonfield, N. J.
Ruth Davis Fetzer	West Milton
John Warren Fisher	Tamaqua
Frederick Jenkins Foster	Carbondale
Kendon Viviani Foster	Carbondale
Gilbert Ray Frith	South Williamsport
George Henry Fritzinger	Mauch Chunk
Carlton LeRoy Gardner	Harrisburg
Kenneth Earl Gardner	Juniata
Robert Young Garrett, Jr.	Haddonfield, N. J.
Anna Mary Gettys	Derry
Martin Goodman	Altoona
Elizabeth Young Griffith	Scranton
Goldena Sweet Guilford	Farmingdale, N. J.
Eugene Edward Halleran	Sea Isle City, N. J.
Clarissa Wardwell Hamblin	Lewisburg
James Harold Hand, Jr.	Cape May, N. J.

Name	Address
Orval Johnson Hand	Montour Falls, N. Y.
Thomas Duffield Hann, Jr.	South Brownsville
Christine Nellie Hardy	Greenwich, Conn.
Mary Jefferies Harrar	Camden, N. J.
Mary Elizabeth Haslam	Palmerton
Colvin Hassenplug	Milton
Jacob Zern Heberling	Lehighton
Rachel Eddelman Heim	Lewisburg
Edwin Sylvester Heiser, Jr.	Lewisburg
Jesse Hyle Helsel, Jr.	Hollidaysburg
Frederick Raymond Helwig	Millersburg
George Llewellyn Hickok	Troy
Carl Augustus Hile	Lumber City
Arthur Franklin Hirt	Altoona
Louis Milton Holland	Hollidaysburg
Kenneth Waite Horsman	Erie
Richard Lloyd Horter	Philadelphia
John Taylor Howard, 2nd	Emporium
John Frederick Williams Howell	Atlantic Highlands, N. J.
Edward Jackson Humphreys	Reading
Clarence Applebee Hurst	Norristown
George Hurteau, Jr.	Florence, S. C.
Eurfryn Jones	Nanticoke
Elmer Miles Jones	Wilkes-Barre
Malcolm Gwynne Jones	Nanticoke
Samuel Horton Jones	Woodstown, N. J.
Donald Heller Kaupp	Williamsport
Susan Elizabeth Kennedy	Muncy
Eleanor Kitlowski	Nanticoke
Grace Elizabeth Klapp	Watsonstown
Kathleen Winifred Kleckner	Mifflinburg
Dorothy Sarah Klotz	Moorestown, N. J.
Edward Alford Knorr	Haddonfield, N. J.
George Irving Koch	Williamsport
Warren Thomas Kopp	Williamsport
Anthony Joseph Kostos	Mt. Carmel
Walter Foulke Kuster	Bloomsburg
Mary Elizabeth Kurr	Bethel
Clyde George Learn	Salamanca, N. Y.
LaRue Lieb	Williamsport
Santo Guisseppi Lipari	Atlantic City, N. J.
Dorothy Locke	Camden, N. J.
Gilbert Anthony Long	Millersburg
Stephen Michael Lukesh	Wyoming
Ambrose Victor Lupcho	Nanticoke
Joseph Wilson McCormick, Jr.	Bridgeton, N. J.
Bruce Arthur McHail	Bolivar
William Porter McNutt	Wickhaven
David Davis Malick	Morea Colliery
Charlotte Fowler Mansell	Sound Beach, Conn.
Ethel Hazel Marks	Westwood, N. J.
Harold Cuthbert Marshall	South Brownsville
Mildred Lillian Marshall	Washington, D. C.

Name	Address
Clarence John Martz	Washingtonville
James Vandine Martz	Sunbury
William Alan Mathewson	Windber
George Andrew Mattson	Camden, N. J.
James Thomas Meckley	Conemaugh
Mary Hull Menges	Montgomery
Richard Treat Merwin	New Haven, Conn.
Hannah Metcalfe	Nanticoke
Thomas Jefferson Miers	Dallas
Howard Clarence Miles	West Chester
Carolyn Emma Miller	Mifflinburg
David Lewis Miller	Juniata
John Burdick Miller	Coudersport
Katheryne Elizabeth Miller	Montgomery
Ruth Logan Miller	Bradford
Pauline Esther Milliken	Silver City, N. M.
Andrew Brown Montgomery	West Newton
George Warren Morgan	Pottsville
Isabelle Coopey Morrison	Nanticoke
Martha Maurine Morrow	Camptown
Bernard Martin Moss	Paulsboro, N. J.
Kenneth Thompson Murphey	Parkesburg
Francis Clarence Murray	Reynoldsville
Rene Noel Nameche	Ford City
Paul Lester Nieman	Wilkes-Barre
Henry Kohler Owen	York
Alexander Matier Palmer	Oakmont
Roy Peters	Lambertville, N. J.
George Robert Plender	Wilmerding
Charles Solomon Pomerantz	Atlantic City, N. J.
Paul Gordnier Potter	Coudersport
Margaret Marion Price	Williamsport
Ruth Marion Propert	Philadelphia
Alfred Thornton Purks	Drexel Hill
Stewart Leeds Rankin	Reading
George Brittain Reed	Montoursville
Robert Buren Reed	Norton, Va.
Sara Mae Reed	Lewisburg
James Smith Replogle	Johnstown
Leon Harry Richman	Philadelphia
Donald Liggett Rigg	Pottstown
Chester Alan Rishell	Erie
Gladys Irene Roberts	Germantown
William Hamilton Rodgers, Jr.	Allentown
George Welliver Rogers	Reading
Charles Almon Rosencrans	Cleveland, O.
William Barrett Rupp	Lewisburg
Maria Allen Salisbury	Swedesboro, N. J.
Mary Gwendolyn Sanders	Northumberland
Russell Edenton Sangston	McClellandtown
Ernest Chester Shaffer	Latrobe
John Paul Shaffer	Vandergrift
Marie Shaffer	Brookville

Name	Address
Boyd Robert Shedd	Princeton, N. J.
Geraldine Shelow	Tyrone
David William Shindel	Sunbury
Walter Stanley Shorts	Dickson City
Joseph Earl Shreve	Trenton, N. J.
Robert Charles Shultz	Sunbury
John Meason Shultzabarger	South Fork
Gertrude Samantha Sibel	Ligonier
Andrew James Silenskey	Madera
Kenneth Wilson Slifer	Woodbury, N. J.
Ida Preston Sloan	Lewisburg
Stanley Yale Slocum	Carbondale
Carrie Mae Smith	Lewisburg
Frank David Smith	Worcester, N. Y.
Isabelle Mareca Smith	Boston, Mass.
Lois Myrtella Smith	Milton
Robert Hughes Smith	Knoxville
Robert Frederick Snodgrass	Muncy
Charles Robert Snyder	Montandon
Vera Mae Spencer	DuBois
Harry Arthur Spranca	Wall
Charles Harmon Springer	South Brownsville
Mary Elizabeth Stahl	Lewisburg
Thelma Sara Stamm	Milton
John Edwin Steely	Lewisburg
Anna Overholt Stephens	Mooreburg
Edward Lamont Stewart	Montgomery
Russell Earl Stewart	Ford City
Rollin Harmon Taylor	Wilburton
Samuel Vanderburg Tench, Jr.	Wilkes-Barre
Elizabeth Evans Thompson	Pitman, N. J.
Myrtle Kathryn Thompson	Mifflinburg
Norman Holmes Thorn	Plainfield, N. J.
Gordon Throne	Montgomery
Willard Hiram Tice	Quakertown
Florence Rebecca Utt	Bloomsburg
Anna Margaret VanDine	Hazleton
Reeves Bailey Van Duzer	Glenwood, N. J.
William Clair Vickroy	Windber
Dale Roosevelt Wagner	Lewisburg
William Frank Wagner	Smithton
Ralph Lincoln Walter	Mt. Carmel
Emerson Edwards Ware	Glassboro, N. J.
Clifford Wester	Kittanning
William Rafford White	Coudersport
Evan Charles Williams	Mainesburg
Charles Pennock Williamson	West Chester
William Lester Winstanley	Trenton, N. J.
Harold Lamont Winters	Williamsport
Robert Thomas Woodings	Oakmont
Adam Follmer Yerg	Milton
Ann Sprague Zerby	Jenkitown

Name	Address
Kathryn Elizabeth Zierdt	Hazleton
Robert Kolp Zortman	Lewisburg
Virginia Kolp Zortman	Lewisburg

## FRESHMEN: CLASS OF 1927

Name	Address
Ruth Isabelle Ackerman	Erie
Halsey Leonard Allen, Jr.	Leominster, Mass.
Robert Herschel Allison	South Brownsville
John Boyd Allsworth	Greensburg
Clayton Wilson Anderson	Belle Vernon
Douglas Walden Anderson	Little Falls, N. J.
Dorothy Estella Andrews	Pittsburgh
Upton Samuel Angle	Shippensburg
Frederick Samsel Angstadt	Reading
John Joseph Augustine	Mt. Carmel
Frances Brown Aumiller	Lewisburg
Margaret Ross Aumiller	Lewisburg
Merrille Wilson Badman	Houtzdale
George William Bailey	Latrobe
Abraham Louis Bailine	Atlantic City, N. J.
Eleanor Ballentine	Lewisburg
Jean Banks	Lewisburg
Lewis Eugene Bardo	Williamsport
Harold Edward Barthold	Olyphant
Donald Joris Barton	Albany, N. Y.
Frank Joseph Bawiec	Nanticoke
Stuart Harold Bean	Knoxville
Florence Warwick Beckworth	East Lansdowne
Donald Foster Beidleman	Nanticoke
Gilbert Lloyd Bennett	Port Matilda
George Richardson Bennett	Rutherford, N. J.
Albert Wendell Bihl	Harrisburg
William Leon Bird	Kirkwood, N. Y.
Wilbert Harry Blecker	Lebanon
Phoebe Ann Bloomfield	Williamsport
William Robert Boben	Kingston
John William Boggs	Milton
William Brown Bossert	Mill Hall
Rawle LeRoy Bower	Scranton
Harold Wesley Boyer	Wiconisco
Henry Francis Bradley	Madison, N. J.
Wilbur Dunham Brandiff	Salem, N. J.
Helen Blanche Breese	Williamsport
Margaret Unruh Brick	Marlton, N. J.
Arthur Brogan, Jr.	Mt. Vernon, N. Y.
Baldwin Spencer Brown	Lansdowne
Herbert Leighton Brown	Meshoppen
William Kenneth Browne	Vineland, N. J.
James Joseph Bruno	Kelayres
Howard Arthur Bull	Montour Falls, N. Y.



## Name

## Address

Gerald Vaughan Burns	Emporium
Bright Frederick Byerly	West Milton
James Nichols Caldwell	Sayre
Milton Caplan	Pittsburgh
Charles Irving Carpenter	Cambridge, Md.
Donald Ellsworth Catlin	Sayre
Joseph Jenkinson Catterall	Berwick
Catherine Amanda Cawley	Lewisburg
John Graham Chesney	Paulsboro, N. J.
Albert Robson Coates	Lafin
Charles Coene	Paterson, N. J.
Samuel Vincent Convery	Perth Amboy, N. J.
Theodore Constantine Costides	Rutherford, N. J.
William Franklin Coughenour	Latrobe
Thomas Bram Courson	Wesleyville
David Espenett Cowell	Springhouse
John Howard Crawley	Picture Rocks
John Stoughton Cregar	Plainfield, N. J.
John Edward Creighton	Mackeyville
Margaret Eleanor Dakin	Brooklyn, N. Y.
William Maynard Barton Vernon Dakin	Brooklyn, N. Y.
William Franklin Darks	Tamaqua
Lewis Kernick Davis	Belleville, N. J.
Theodore Prosser Davis	Lansford
Veta Dorothy Davis	Nanticoke
Albert Gilkey Dearman	Knoxville
Sarah Margaret DeArmond	Watsonstown
Ernest Bradley Decker	New Milford
Evelyn Harris Deen	Spruce Hill
William Devitt, Jr.	Allenwood
Glenn Walter Diehl	Mt. Carmel
Elmer William Dietz	Collingswood, N. J.
Robert Whitmer Dill	Haddon Heights, N. J.
Robert Emmett Dilworth	West Springfield
Marjorie Lillian Ditzler	Milton
Leonard Donnzalski	Nanticoke
Ralph Emanuel Dorman	Nittany
Albert Francis Doyle	Johnstown
Albert Sherden Drake	Vandergrift
Agnes Mary Dunbar	Woodside, N. Y.
Caryl Rushton Dutton	Buffalo, N. Y.
William Harry Dykins	Nanticoke
Adeline Beatrice Eaker	Muncy
Cora Margaret Edwards	Homestead
Marian Wyne Eisenhauer	Lewisburg
Walter Kenneth Elder	Wilkinsburg
Clyde William Ellzey	Osyka, Miss.
Dean Chalmers Emerick	Nittany
Milton Cain Endres	Seaside Heights, N. J.
Marlyn Daniel Etzweiler	Wrightsville
James Fred Farnsworth	Bloomsburg
Martha Naomi Felty	Lewisburg
Ralph Washington Flexer	Williamsport



Name	Address
Aldus Fogelsanger	Shippensburg
George Leonard Fogelsonger	Shippensburg
James Clyde Foose	Juniata
Harold Louis Fortner	Port Allegany
Mary Graybill Foust	Pittsburgh
Mildred LaRue Fox	Norristown
Edith Mae Freed	Pedricktown, N. J.
Sonia Alexandra Frey	West Roxbury, Mass.
Walter Anthony Furman	Nanticoke
Joseph Harold Gamble	Buffalo, N. Y.
Horace Willard Gardner	Pittsburgh
Paul Lehman Garrett	Hellam
Richard Paul Garrett	Lewistown
Katherine Elizabeth Gaventa	Pedricktown, N. J.
Reginald Frederick Gaylord	Aldenville
Harold Foster Gearhart	Lewisburg
Charles Preston Geist	Sunbury
John Lester George	Winburne
Dorothy Gilbert	Danbury, Conn.
John Robert Gilmour	Hawthorne, N. J.
Wilson Arthur Glutting	Hanover Neck, N. J.
Carl Goettel	Williamsport
Florence Effie Gold	Turbotville
Louis Samuel Goldstein	Yonkers, N. Y.
Gordon Goodyear	Binghamton, N. Y.
John Franklin Gordner, Jr.	Montgomery
Carvil Alton Gregory	Lutonia, Ohio
William Christian Gretzinger	Lewisburg
Mason Welty Grey	Greensburg
Helen Rebecca Grove	Lewisburg
Herbert Reed Grundy	Haledon, N. J.
Vivian Stauck Gummo	Lock Haven
John Frederick Hackenberg	Milton
George Maize Hain	Altoona
Bertram Parker Haines	Pitman, N. J.
Amy Augusta Haldeman	Malvern
Harold Pitt Hallock	Jackson Heights, N. Y.
Thomas Carson Hanna, Jr.	Sunbury
Marian Harkness	Wellsboro
George Washington Hart	Montgomery
Earl John Hartman	Slatington
Richard Hartman Harvey	Lock Haven
Lewis George Hausser	Jersey Shore
Francis Charles Hayes	Renovo
Herbert Eddelman Heim	Lewisburg
Charles McMinn Hennen	Fairmont, W. Va.
Willard Root Hetler	Latrobe
Henry Baldwin Higby	Frenchtown, N. J.
George Wager Hill	Penn Yan, N. Y.
John Henry Hobart	New Cumberland
Clayton David Hollinger	Lansford
Francis Courts Hopkins	Philadelphia
Louis Fegley Hopp	Lewisburg

## Name

## Address

Alexandria Horoschak, Jr.	Perth Amboy, N. J.
Mary Kathryn Houtz	South Williamsport
Morris Rosenberry Van Natta Howell	Easton
Walter Lewis Hufnagle	Catawissa
James Edgar Hulick	Easton
James Dickinson Johnson	Harrisburg
Paul McKelvey Johnston	Apollo
Edward Emlyn Jones	Scranton
James Victor Jordan	Paterson, N. J.
George Edward Katch	Keiser
Stella Keebler	Freeport
Charity Pawling Smith Keiser	West Milton
Grace Marjorie Kerr	Johnstown
Sara Elizabeth Keyser	Milton
Clara Arlene Kimball	Vineland, N. J.
Norman Edward King	Pitcairn
Ruth Allen Kirker	Franklin
Richard Fritzius Kirker	Franklin
Andrew Klembara, Jr.	Shamokin
Darwin Dana Klinetob	Berwick
John Weber Kling	Lewisburg
Robert Starrett Knauff	Milton
Warren Godshall Knieriem	Tamaqua
Glenn Edward Knight	Newberry
Landis Donald Kohr	Middletown
Mary Bowen Konkle	East Orange, N. J.
Carl Frederick Krause	Milton
Helen Margaret Krebs	Lewisburg
Charles John Kushell, Jr.	Detroit, Mich.
Loveda Mae Lagerman	New Columbia
Willard Arthur Laning, Jr.	Pittsburgh
John Latzo	Taylor
Joseph Caleb Laucks	Red Lion
Albert Brown Lauderbaugh	Albany, N. Y.
Elizabeth Knight Lawson	Lewisburg
Cora Effie Leiser	Muncy
Kenneth Lewis Lessing	Glen Rock, N. J.
Benjamin Franklin Lewis	Nanticoke
Llewellyn Lewis	Wilkes-Barre
John Edwards Livermore	Crown
Janet Elizabeth Lockwood	Greenwich, Conn.
John Richard Lofft	Collingswood, N. J.
William Brodhead Lose	Montoursville
Eleanor Mae Lotte	Allentown
Harry William Lunger	Milton
Edward George Lyman	Sayre
Robert Franklin McAnulty	Barnesboro
Stanley Anderson McCaskey, Jr.	Edgewood Park
Harold Cunningham McCleary	Watertown, Conn.
Earl Franklin McClune	Ligonier
Elizabeth Josephine McCracken	Lewisburg
Gilbert Graham McCune	West Springfield
Hugh Richard McDowell	Ligonier

Name	Address
Helen Lilian McElravy	McKeesport
James Thomas McFarland	Parkesburg
Kenneth Erskine McGinnis	Pittsville
Estelle Fern McNeal	Nescopeck
William Crist Madison	Muncy
Russell Lowell Magee	South Brownsville
Clayton Baker Mahaffey	Williamsport
Domingo Maré	New York, N. Y.
Ruth Cobb Marion	Philadelphia
Philip LaVerne Martin	Sayre
Ralph Henry Martz	Sunbury
Christopher Mathewson, Jr.	Saranac Lake, N. Y.
Ruth Evelyn Matz	Shillington
Clifford Harrison Mellor, Jr.	Roselle Park, N. J.
William Clarence Meminger	Spruce Hill
John Brown Middleton	Collingswood, N. J.
Sara Grace Milhous	Kennett Square
Bruce Jones Miller	Green Burr
Dorothy Mae Miller	Lock Haven
Florence Luella Pearl Miller	Snydertown
John Creveling Minick	Mt. Airy, N. C.
Robert Elmer Mitchell	Coaldale
Marcel Louis Monnot	Ford City
Fred Evans Moore	Reynoldsville
William Frank Moore	Reynoldsville
William Paul Moore	Pitman, N. J.
John Cowper Morrison	Ridgewood, N. J.
Glen Boyd Morrow	Lewisburg
Arlan Paul Mosser	Shillington
Robert Dumars Mossman	Oakmont
Earl Langdon Moyer	Lewisburg
Kenneth Ernest Moyle	Brooklyn, N. Y.
Lyman Hauck Musser	Mifflinburg
Clarence Rollin Mutchler	Hepburnville
Robert Nathans	Brooklyn, N. Y.
Paul Forman Nedrow	South Brownsville
James Edward Nickel, Jr.	Sunbury
Carl Morris Nieweg	Reading
Eugene Emmor Noble	South Brownsville
Anna Marion Outwater	Westfield, N. J.
James Alvin Overdorff	Johnstown
Nathaniel Reynolds Packard	Atlantic City, N. J.
Florence Edythe Parmley	Mahanoy City
Paul Leiser Patton	Lewisburg
William Miles Pauling	Allenwood
John Sanford Peifer	DuBois
Sara Josephine Pentz	Harrisburg
William Craig Perrine	New York, N. Y.
Grace Mary Pheifer	Allentown
Henry Piasecki	Nanticoke
Marcella Lois Pierce	West Hoboken, N. J.
Simon George Povish	Shamokin
Florence Prickett	North Woodbury, N. J.

## Name

## Address

Clifford West Pullen	Trenton, N. J.
Edward Snyder Ramsdell	Worcester, Mass.
Walter Lee Ranck	Milton
Marguerite Josephine Rathmell	Williamsport
Glenn Orrin Raymond	Pittsburg
Jane Olwen Rees	Nanticoke
Gerald Filman Reichelderfer	Pottstown
Kathryn Helen Reitz	Lewisburg
Willard Oldt Remer	Lewisburg
Margarida Fralick Reno	Victoria, Brazil
Joseph Ricchiuti, Jr.	Mahanoy City
Helen Dorothy Richards	Jersey Shore
Edward Paul Richie	Milan
August Henry Riesmeyer	Pittsburgh
Daniel Webster Robinson	South Beach, Conn.
Clyde Leroy Roller	Picture Rocks
George Arthur Roller	Picture Rocks
Wellington Albert Rothermel	Danville
Harry Smith Ruhl	Lewisburg
Mabel Irwin Ruhl	Lewisburg
Stanley Creighton Russell	Philadelphia
Primo Peter Sacket	Perth Amboy, N. J.
Howard Beidler Schanely	Quakertown
John William Schubert	Bradford
George Ames Schuck	Shamokin Dam
Lorenzo Scotti	Philadelphia
Virginia Burtaine Scully	McKeesport
James Francis Seidel	Milton
William Rawn Shaw	Lebanon
Albert Wilson Sheckells, Jr.	Harrisburg
Elizabeth Hannah Sherer	Lehighton
Burris English Shimp, Jr.	Quinton
Jane Elizabeth Shrum	Irwin
Dorothy Rosamond Simons	Lewisburg
Mildred Marie Sipe	Sunbury
Howard John Smith	Coudersport
Kathryn Mary Smith	Nanticoke
Oscar Cozard Smith	Uniontown
Stanley Sharpless Smith	Williamsport
William Drue Stayer	Pittsburgh
Harry Charles Stenger, Jr.	Williamsport, Md.
John Clyde Sterner	Bloomsburg
Fred Eugene Stevens	Potter Brook
Jay Tenbrook Stout	Atlantic Highlands, N. J.
Albert Elias Strausser	Mt. Carmel
William Sucatzky	McDonald
James Edward Sugden	Wilkes-Barre
Cornelius DeSales Sutter	DuBois
Robert William Swayne	Altoona
Blanche Johnes Thompson	Hightstown, N. J.
Helen Elizabeth Thomson	LaJose
Theodore Martin Tomaska	Connellsville
Davis Louis Trax	Warren

Name	Address
Howard Smink Unger	Shamokin
Charles DeLauney Valentine	Jersey City, N. J.
Edwin James Glass Valentine, Jr.	Jersey City, N. J.
Charles Leo Patrick Vallery	Windber
Arthur Leland Van Tine	Vandergrift
Richard Benscoter Vastine	Shamokin
Samuel Emile Vuille	Huntingdon
Donald Ellridge Wagner	Lewistown
Malcolm MacHenry Wagner	Exchange
George Washington Walker	Stidham, Okla.
Catherine Marie Walter	Milton
Stearns Eugene Warner	Allentown
Edna Mae Watson	Union Hill, N. J.
Harold Franklin Webber	Pottsville
Paul Guilford Webster	Buffalo, N. Y.
Edward Eugene Weckerly	DuBois
Theodore Clayton Wilcox	Knoxville
Harry Hoxie Williams	Nanticoke
Lavinia Betty Williams	Olyphant
Madeline Oakley Wintermute	New York, N. Y.
Edith Mae Womer	Allentown
Doris Naomi Worrell	Freeland
Raymond George Yeich	Reading
Pauline May Young	East Rochester, N. Y.
Thomas Irwin Young	Beadling
Patrick Youtz	Sunbury
Paul Vernon Zeyn	West Hoboken, N. J.

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## SPECIAL STUDENTS

Name	Address
Beatrice Marie Landelle Butler	Milton
Catherine Craig	Sparta, Tenn.
Olive Douglass	Lewisburg
Marguerite Caroline Hartman	Danville
Carolyn Julia Hunt	Lewisburg
Ruth Margaret Saul	Norristown
Miriam Harp Stanger	Glassboro, N. J.
Helen Eva Waldner	Ashland



**SUMMARY OF COLLEGE STUDENTS**

Graduate Students .....	4
Seniors .....	168
Juniors .....	213
Sophomores .....	233
Freshmen .....	337
Special Students .....	8
	<hr/>
Total .....	963



## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

By States			
Connecticut	7	Clinton	8
District of Columbia	1	Columbia	13
Florida	1	Crawford	1
Maryland	2	Cumberland	7
Massachusetts	6	Dauphin	17
Michigan	1	Delaware	3
New Jersey	118	Elk	1
New Mexico	1	Erie	7
New York	36	Fayette	9
North Carolina	1	Huntingdon	2
Ohio	5	Indiana	1
Oklahoma	1	Jefferson	12
Pennsylvania	768	Juniata	2
Rhode Island	1	Lackawanna	19
South Carolina	1	Lancaster	1
Tennessee	1	Lebanon	2
Virginia	3	Lehigh	10
West Virginia	3	Luzerne	62
		Lycoming	63
		McKean	11
		Mercer	1
		Mifflin	3
		Monroe	1
		Montgomery	13
		Montour	9
		Northampton	2
		Northumberland	91
		Philadelphia	17
		Potter	5
		Schuylkill	21
		Snyder	1
		Somerset	3
		Sullivan	1
		Susquehanna	4
		Tioga	11
		Union	98
		Venango	5
		Warren	3
		Washington	1
		Wayne	7
		Westmoreland	29
		Wyoming	6
		York	7
		Total	768
		Final Total	963
By Foreign Countries			
Burma	1		
Hawaii	1		
Japan	1		
South America	3		
Total	6		
By Counties in Pennsylvania			
Allegheny	47		
Armstrong	10		
Beaver	1		
Berks	12		
Blair	18		
Bradford	9		
Bucks	2		
Cambria	19		
Cameron	3		
Carbon	9		
Center	8		
Chester	19		
Clarion	3		
Clearfield	18		

# ALUMNI ORGANIZATIONS

## GENERAL ALUMNI ASSOCIATION

President, James A. Tyson, '11 Kunkle Bldg., Harrisburg  
 Secretary, Harry R. Warfel, '20 Lewisburg

## THE ALUMNI CLUB OF PHILADELPHIA

President, Dr. Samuel Bolton, '85 4701 Leiper St.  
 Secretary, Louis W. Robey, Esq., '04 918 Stephen Girard Bldg.

## THE ALUMNI CLUB OF NEW YORK CITY

President, C. M. Konkle, '01, 48 Hawthorne Ave., East Orange, N. J.  
 Secretary, W. W. Pangburn, '10, 192 Joralemon St., Belleville, N. J.

## THE ALUMNI CLUB OF PITTSBURGH

President, C. D. Loveland, '11 2541 Oliver Bldg.  
 Secretary, Harold G. Florin, '22 1312 Park Bldg.

## THE ALUMNI CLUB OF CHICAGO

President, W. C. MacNaul, '90 548 Oakwood Bldg.  
 Secretary, G. T. Keech, '15 4019 Sheridan Road

## THE ALUMNI CLUB OF NORTHEASTERN PENNSYLVANIA

President, Rev. Charles S. Roush, '09 45 Mallery Place, Wilkes-Barre  
 Secretary, Francis J. Beckley, '17 122 E. Green St., Nanticoke

## THE ALUMNI CLUB OF HARRISBURG

President, J. A. Tyson, '11 Kunkle Bldg.  
 Secretary, W. C. Sprout, '08 % The Patriot, Harrisburg

## THE ALUMNI CLUB OF WILLIAMSPORT

President, Oliver J. Decker, Esq., '99 Trust Bldg.  
 Secretary, Anne Galbraith, '07 965 High St.

## THE ALUMNI CLUB OF LEWISBURG

President, Leroy T. Butler, '97 Lewisburg  
 Secretary, Claire G. Groover, '15 Lewisburg

## THE ALUMNI CLUB OF CALIFORNIA

President, Allan G. Ritter Esq., '09 1012 Black Bldg., Los Angeles  
 Secretary, Roy J. Farr, Esq., '08 716 Ferguson Bldg., Los Angeles

## THE ALUMNI CLUB OF CHINA

President, Rev. Charles Way Harvey, '00 20 Museum Road, Shanghai  
 Secretary, Rev. Lewis C. Hylbert, '05 Ningpo

**THE CLEVELAND ALUMNI CLUB**

President, Ralph W. Snow, '94 1024 B. of L. E. Bldg.  
 Secretary, Helen Moyle Bailey, '20 1920 E. 84th St.

**MIFFLIN-JUNIATA ALUMNI CLUB**

President, Hiram N. Wolfe, '11 Lewistown  
 Secretary, Catherine G. Thompson, '19 Reedsville

**BERKS COUNTY ALUMNI CLUB**

President, Dayton L. Ranck, '16 % Narrow Fabric Co., Reading  
 Secretary, Mary Stanton Speicher, '07 1050 Madison Ave., Reading

**THE ALUMNI CLUB OF YOUNGSTOWN, OHIO**

President, Charles Koonce, Jr., '90 1209 Wick Bldg.  
 Secretary, Ruth Cooper, '19 25 W. Evergreen Ave.

**THE ALUMNI CLUB OF TRENTON**

President, J. Warren Davis, '96 P. O. Bldg.  
 Secretary, Emma E. Dillon, '15 2000 Nottingham Way, R.D. 2

**THE ROCHESTER (N. Y.) ALUMNI CLUB**

President, Finley Keech, '22 Rochester Theological Seminary  
 Secretary, Ellis S. Smith, '21 64 Nunda Boulevard

**THE GENERAL ALUMNAE ASSOCIATION**

President, Mrs. Helen Houghton Zeller, Inst. '03 Lewisburg  
 Secretary, Helen Hoffa, '19 Lewisburg

**THE PITTSBURGH ALUMNAE CLUB**

President, Mrs. John B. Dumont, Jr., Inst. '00 312 Frederick Ave., Sewickley  
 Secretary, Bina Carr 5511 Howe St.

**THE PHILADELPHIA ALUMNAE CLUB**

President, Mrs. Romain C. Hassrick 4518 Chestnut St.  
 Secretary, Carrie McCaskie Wise, '06 23 Mill Road, Ashbourne

**THE LEWISBURG ALUMNAE CLUB**

President, Miss Carrie Foresman, '16 Lewisburg  
 Secretary, Mrs. Fanny Getz Brown, Mus., '06 Lewisburg

**THE ALUMNI ASSOCIATION**

The General Alumni Association is the official organization of the alumni to advance the interests of the University. It is incorporated. All former students of the

College are members, but only those who have paid the life membership fee or the annual dues are eligible to vote or to hold office.

The officers are a president, two vice presidents, and a Secretary. The Alumni Council is composed of one representative each from the various local clubs. The Board of Managers is the Board of Directors of the corporation. It is elected by the Alumni Council.

The annual membership fee, including subscription to the Alumni Monthly, is \$2.50. The life membership fee, including life subscription to the Alumni Monthly, is \$25. The Alumni Monthly subscription to those who are life members under the old \$5 and \$10 plans, is \$1.50. Checks in payment of dues should be made out to the Bucknell University General Alumni Association.

### THE ALUMNI OFFICE

The Alumni Office in Main College is in charge of the Alumni Secretary. The Alumni Records are kept here. They include the addressograph geographical files, the card class and alphabetical files, and miscellaneous files of various kinds. The Alumni Office appreciates prompt notice of address changes on the part of alumni. A beginning has been made of a collection of historical material dealing with the University. This includes old issues of the College Herald, the Bucknell Mirror, L'Agenda, the Orange and Blue, pictures of historical interest, books and clippings, and the like. Gifts to this collection will be gladly received.

The Alumni Monthly, published monthly from October to June, aims to keep the alumni informed of the progress of the University, of the activities of the alumni, and so far as possible of undergraduate activities. It serves also as a clearing house of alumni opinion on topics of general interest to friends of the University.

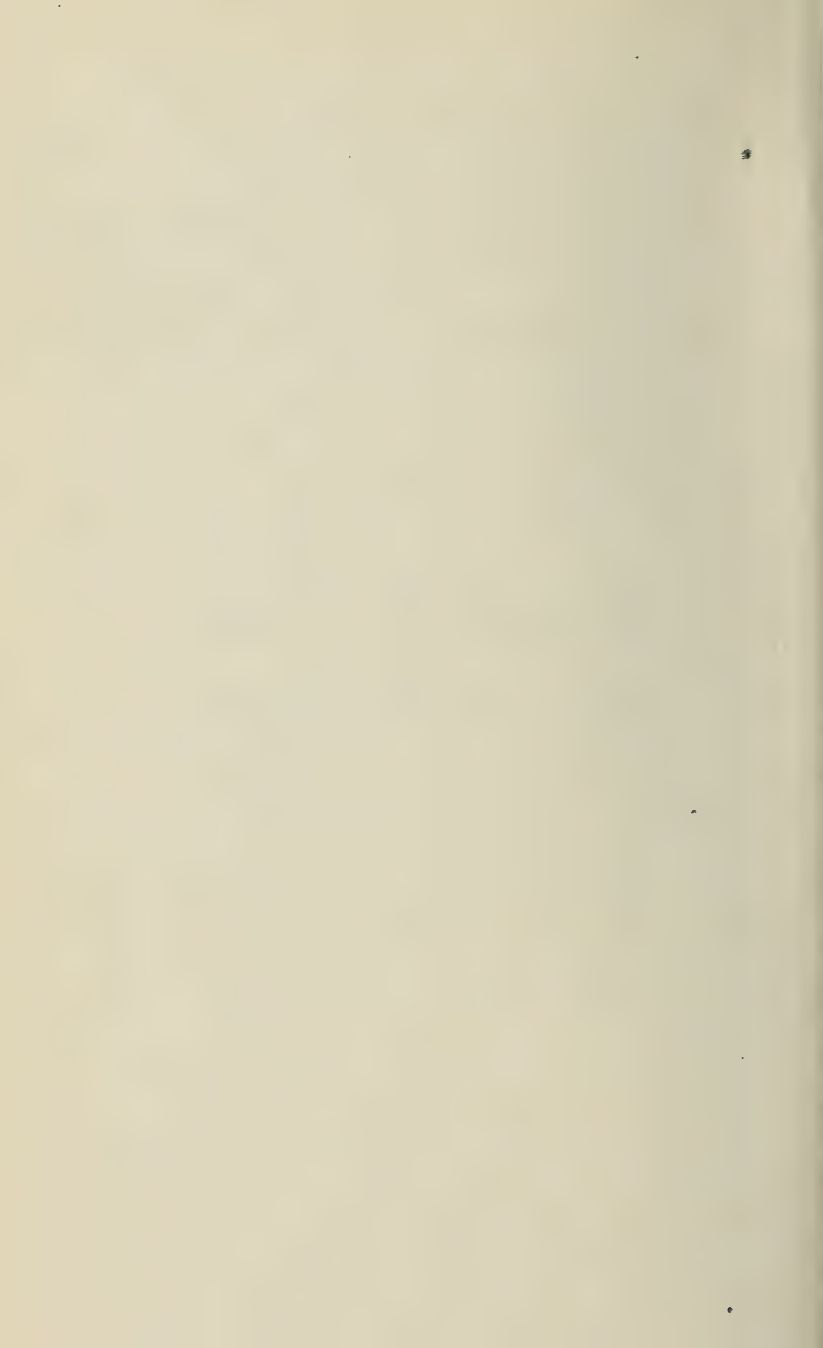


Bucknell University

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The School of Music





# THE SCHOOL OF MUSIC

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## FACULTY

PAUL GEORGE STOLZ, A.M., Director

Science of Music, Voice

(Dr. Elysée Aviragnet, Bucknell University School of Music;  
Dr. Hugh Schussler, New York, N. Y.; Embich and Soehlin,  
Berlin)

CHARLOTTE GUION ARMSTRONG

Violin, History and Appreciation of Music

(New England Conservatory of Music, Boston;  
Ovide Musin, New York)

ANNA MARTHA PINES

Supervisors' Course

(Bucknell University School of Music; Coomb's Conservatory,  
Philadelphia; Cornell University, Ithaca, N. Y.)

DAVID EARL MOYER

Piano

(Alberta Jonas, Berlin; Ernst von Dohnanyi, Berlin; Royal  
Academy, Berlin)

KATHERINE BERGSTRESSER

Piano

(Bucknell University School of Music; George Boyle, Peabody  
Conservatory of Music, Baltimore; Wilson College,  
Chambersburg, Pa.)

JANET STEELE MENCH

Organ

(Bucknell University School of Music; Dr. Fred Wolle,  
Bethlehem, Pa.)

RAYMOND HALL MILLER

Organ

(Bucknell University School of Music; S. Wesley Sears,  
Philadelphia)

## MARGUERITE HARTMAN

Voice

(Bucknell University School of Music; Wilson College, Chambersburg, Pa.; Eastman School of Music, Rochester, N. Y.)

## GRACE JENKINS

Voice

(Coomb's Conservatory, Philadelphia)

## RALPH FRANKLIN HARTZ, B.S.

Voice

(Bucknell University School of Music; Carl Sebastine, Royal Conservatory of Music, Naples)

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HISTORY

Music was first taught at Bucknell University in 1853 by Melville Malcolm under the supervision of the Seminary. Various teachers conducted the work until 1858 when Theodore P. Held took charge with one assistant. In 1864 he was given a second assistant. In 1865 Mr. Held withdrew, but he again resumed his work in 1866. In 1867 Alexander M. Loos was made Professor of Music. In 1869 Hermann F. Eberhardt took up the duties of Professor of Music and by 1870 there were sixty students enrolled in the Department. In 1871 a vocal teacher was added to the music faculty. In 1888 Professor Elysée Aviragnet, M.A., Mus. D., took charge of the Department. In 1892 the Music Department became the Bucknell University School of Music. Paul George Stolz who had been actively associated with Dr. Aviragnet and his work in the School of Music became his assistant, later Assistant Director, and at Dr. Aviragnet's death in 1908 was appointed Director of the School of Music.

## ADMISSION TO THE SCHOOL OF MUSIC

All applicants for admission should secure application blanks from the Director.

### General Requirements

The requirements for admission to the courses in the School of Music leading to a Diploma are practically equivalent to those of the College. Applicants for admission (1) must be at least sixteen years of age; (2) must possess a reasonable amount of musical intelligence; (3) must have completed fifteen units of secondary school work; and (4) must have graduated from a secondary school. A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

### Special Requirements

For admission to the Supervisors' course and the course in Voice, ability to sing hymns and folk tunes at sight with a fair degree of accuracy and facility, and the possession of an acceptable singing voice and of a fairly quick sense of tone and rhythm are required.

For admission to the course in Piano, ability to play Heller Opus 47; Bertini Opus 29; Sonatinas by Clementi, Reinecke; or Kuhlau; Bach's Little Preludes; Mozart, and Haydn, easier Sonatas, is required.

For admission to the course in Organ, a satisfactory knowledge of piano technique and a facility in sight reading are required.

Students who do not meet the above requirements may be admitted to the Preparatory Department.

## GRADUATION FROM THE SCHOOL OF MUSIC

Diplomas are granted to students who complete any four year course in vocal or instrumental music, or the Supervisors' course.

## Certificates

Certificates for all work completed in a satisfactory manner are granted to students who do not meet the requirements for graduation from the School of Music.

Students who wish to make music a specialty are recommended to register in the College for at least one course each semester in language or literature.

## COURSES OF INSTRUCTION

### PIANO

#### First Year

Bach two and three part Inventions; Heller Opus 45 and 46; Czerny Opus 299; Cramer Studies; Mendelssohn's Songs without Words; Sonatas by Mozart, Beethoven, Haydn. Easy classic compositions. Preparatory octave and chord studies, scales, arpeggios. Solfeggios and Dictation.

#### Second Year

Bach Suites; Czerny Opus 740; Clementi Gradus ad Parnassum; pieces by Mendelssohn, Schubert, Schumann, Chopin, Grieg and others; Beethoven, Sonatas, scales, arpeggios, thirds and octaves.

#### Third Year

Bach Well tempered Clavichord; Studies by Kessler, Henselt, Moschele, Beethoven, Sonatas; Compositions by Schumann; Chopin Preludes, Nocturnes, Polonaises, Ballades; Selections by modern composers.

Harmony.

History of Music.

#### Fourth Year

Bach Clavichord; Arrangements of Bach's Works; Chopin Etudes; Beethoven Sonatas; Selections from Liszt, Rubinstein, Debussy, Rachmaninoff, and other modern schools. Piano sight playing.

Harmony.

Counterpoint and Fugue.

## ORGAN

## First Year

Stainer's Organ Method. Schneider's and Whiting's Organ Studies. Easy Hymn Tunes. Registration. Sight Reading. Easy pieces by Batiste, Flagler, Lemaigre, etc. Solfeggios.

## Second Year

Bach Chorales. Bach Little Preludes and Fugues. Dudley Buck's Pedal Phrasing. Difficult hymn tunes. Organ solos of various styles by Rheinberger, DuBois, Lemare, etc.

## Third Year

Sonatas by Handel, Bach, and Mendelssohn. Preludes, Toccatas, Fugues. Quarte and chorus accompaniment. Selected solos by Guilmant, Handel.

Harmony.

History of Music.

## Fourth Year

Sonatas by Guilmant. Symphonies by Widor. Bach's Advanced Works. Chanting and solo accompaniment. Improvisation. Selected solos for concert use, by Franck, Widor, Guilmant, and Vierne. Voice (two semesters).

Harmony.

Counterpoint and Fugue.

## VIOLIN

## First Year

Scales and finger exercises, Schools and Studies by de Beriot, Dancla, Alard, Belgian School Books I and II, Kayser Op. 20 Book I, etc. Pieces in first to third positions inclusive. Easy Sonatinas, pupils' Concertinos. Solfeggio and Dictation.

## Second Year

Belgian School III, First ten studies of Kreutzer, Scales and Arpeggios in three octaves, Belgian School IV. Concertos of Accolay, Sitt, and others. Sight playing, Chamber Music practice. Solos by Leonard, de Beriot, and others. Sonatas by Corelli, Gade, etc.

## Third Year

Technical studies in all positions, complete Kreutzer, first ten studies by Fiorilla, Concertos of Viotti, Op. 20 & 23, Sonatas of Grieg, Handel, etc. Orchestra playing.

Harmony.

History of Music.



### Fourth Year

Complete Fiorilla, Caprices by Rode, Concertos of de Beriot, Rode, Viotti. Sonatas of Tartini and others. Solos by the best composers. Orchestra playing of Symphonies, Overtures, etc.

Harmony.

Counterpoint and Fugue.

### CONTRABASS

#### First Year

Warnecke's Method of Playing. Scales and finger exercises. Etudes. Solfeggios.

#### Second Year

*Vorzuegliche Uebungen*, by Hause. Etudes. Overtures. Symphonies.

#### Third Year

Warnecke's Method. Advanced Etudes. Beethoven Symphonies. Orchestral work.

Harmony.

History of Music.

#### Fourth Year

Warnecke's Method. Part 2. Wagner Operas. Solos by Sturm and Laska. Orchestral work.

Harmony.

Counterpoint and Fugue. Orchestral work.

### VOICE

#### First Year

Breath Control. First Vocalises of Concone. Diction. Slow, easy songs. Solfeggios.

#### Second Year

Vocalises by Concone, Marchesi, Lamperti, and others. Diction. More advanced English songs. Simple Recitative. Simple Arias. Solfeggios. Piano (one lesson weekly). Chorus. Advanced Vocalises, Song Interpretations. Velocity.

#### Third Year

Advanced Vocalises. Song Interpretation. Velocity. Coloratura singing begun. Difficult Recitatives. Elaborate Arias. Solfeggios. Chorus.

Harmony.

History of Music.

#### Fourth Year

Complete Oratorio Rôles. Complete Opera Rôles. Preparation of Concert Programs. Chorus.

Harmony.

Counterpoint and Fugue.

## SUPERVISORS' COURSE

This is a two year course of training for supervisors of music in public schools.

## Special Requirements in the Supervisors' Course

## Voice

The voice requirement is based upon attainment rather than upon hours of study and recitation. Completion of the course requires the ability to sing rote songs (including art songs suitable for schools) with satisfactory tone quality and interpretation.

## Piano

Completion of the course for supervisors requires the ability to play acceptably the piano accompaniments found in standard school texts.

## First Year

## First Semester

	Class Room Hours	Credit Hours
Sight Reading .....	5	5
Dictation .....	5	5
Introduction to Teaching .....	3	3
Elementary Theory .....	3	3
Child Voice and Rote Songs .....	2	2
Chorus, Glee Club or Orchestra .....	2	1
Voice .....	$\frac{1}{2}$	$\frac{1}{2}$
Piano .....	$\frac{1}{2}$	$\frac{1}{2}$
	Total	20

## Second Semester

Sight Reading .....	5	5
Dictation .....	5	5
Harmony .....	3	3
Psychology and Child Study .....	3	3
English Fundamentals .....	3	3
Chorus, Glee Club or Orchestra .....	2	1
Voice .....	$\frac{1}{2}$	$\frac{1}{2}$
Piano .....	$\frac{1}{2}$	$\frac{1}{2}$
	Total	21

## Second Year

## First Semester

	Class Room Hours	Credit Hours
Material and Methods—(First 6 Grades)	5	5
Applied Material and Methods (Conducting Routine Activities) . . . . .	2	2
Harmony . . . . .	3	3
Music History and Appreciation . . . . .	3	3
Conducting . . . . .	3	3
Care and Classification of Adolescent and Adult Voices . . . . .	2	2
Chorus, Glee Club or Orchestra . . . . .	2	1
Practical Teaching . . . . .	1	1
Voice . . . . .	$\frac{1}{2}$	$\frac{1}{2}$
Piano . . . . .	$\frac{1}{2}$	$\frac{1}{2}$
	<b>Total</b>	<b>21</b>

## Second Semester

Material and Methods (High Schools) . . .	3	3
Harmony . . . . .	2	2
Melody . . . . .	3	3
Practice Teaching . . . . .	10	10
Material and Methods (Band and Orchestra) . . . . .	3	3
Chorus, Glee Club or Orchestra . . . . .	2	1
Practical Teaching . . . . .	1	1
Counterpoint . . . . .	3	3
Voice . . . . .	$\frac{1}{2}$	$\frac{1}{2}$
Piano . . . . .	$\frac{1}{2}$	$\frac{1}{2}$
	<b>Total</b>	<b>27</b>

The Practical Teaching is in public schools under the supervision of the Director of the Supervisors' Course.

## VIOLONCELLO

*Method Pratique* by S. Lee. Studies by Dotzauer.

## VIOLA

Bruni's Methods and Studies by Campagnoli.

## HARMONY

## First Year

## First Semester

Musical Notation, formation of scales, both major and minor, intervals, triads, and chord connection. Simple part writing from given basses and sopranos; the chords of the seventh, with exercises harmonizing in open and close positions.

Modulation. Transposition of various models in all keys. Harmonizing melodies which modulate.

## Second Semester

Chromatically altered chords, suspension, retardation, appoggiatura, passing tone, embellishment, pedal point.

**Second Year****First Semester**

Chromatic tendency chords; classification and use of non-harmonic tunes; free diatonic harmony.

**Second Semester**

One period form; rhythm in vocal music; harmony in less and more than four parts.

**HISTORY OF MUSIC****First Semester**

Brief surveys of ethnology as affecting primitive music; the allied arts of the medieval period; the early forms of music; the beginnings of opera, oratorio and orchestra.

**Second Semester**

Musical classicism with particular study of Scarlatti, Bach, Handel, Haydn, Mozart, Beethoven, Gluck. Musical romanticism.

**COUNTERPOINT AND FUGUE****First Semester**

Free imitative counterpoint in two, three, and four parts.

**Second Semester**

Fugue expositions on given themes.

**RECITALS**

Frequent recitals are held in the presence of the faculty and students of the School of Music and their friends to accustom students to playing in public.

On the Friday evening prior to Commencement Day a public recital of the School of Music is held in Bucknell Hall.

On the Saturday morning prior to Commencement Day a public recital by the pupils and graduates of the organ department is held in the Baptist Church.

The public examination of those who desire certificates of proficiency is held in Bucknell Hall on the Saturday afternoon preceding Commencement Day. At this time each pupil plays or sings two pieces of high grade, and reads an essay on some subject connected with music.

## TUITION

Tuition is charged for instruction in music, per semester, as follows:

	Two semester hours	One semester hour	One-half semester hour
<b>Piano</b>			
Professor Moyer .....	75.00	40.00	25.00
Miss Bergstresser .....	75.00	40.00	25.00
<b>Voice</b>			
Professor Stolz .....	\$100.00	\$60.00	
Miss Jenkins .....	75.00	40.00	\$25.00
Professor Hartz .....	75.00	40.00	25.00
Miss Hartman .....	50.00	30.00	19.00
<b>Organ</b> .....	75.00	40.00	25.00
<b>Violin or Violoncello or Viola</b> .....	75.00	40.00	25.00
<b>Contrabass</b> .....	75.00		
<b>Methods</b> .....	50.00		
<b>Harmony</b> .....	15.00		
<b>History of Music</b> .....	15.00		
<b>Counterpoint and Fugue</b> .....	15.00		
<b>Use of Piano for practice (1 hour daily)</b>	10.00		
<b>Use of Organ for practice (1 hour daily)</b>	20.00		

Special individual instruction in music, per lesson, \$5.00.

Instruction in the orchestra is free to pupils pursuing other courses in music.

The additional charges per semester for pupils residing in the Women's College are as follows:

Board .....	\$100.00
Furnished Dormitory Room, including heat and light ....	30.00
Extra charge for rooms in Bucknell Cottage and in New Residence Hall .....	7.50
Student Budget .....	9.00

Payment is strictly in advance at the beginning of each semester. No reduction is made except in case of protracted illness.

## PRIZES

## The Aviragnet Prize

Friends of Dr. Elysée Aviragnet have endowed a prize for excellence in Music. In 1923 this prize was awarded to Mildred Alice Hayden.

## The Director's Prize

The Director of the School of Music offers an annual prize for excellence in the Science of Music. In 1923 this prize was awarded to Pearl Spaid Custer.

### Voice Prize

The Director also offers an annual prize for excellence in Voice. In 1923 this prize was awarded to Mary Hester Humphrey.

### GENERAL REGULATIONS

Women students in the Music School reside in the Women's College, are entitled to all the privileges of the Women's College, and are under the care of the Dean of Women, subject to regulations enacted by the Board of Trustees.



## STUDENTS

## FOURTH YEAR

Name	Course	Address
Elinor LaRue Breisch	Piano	Ringtown
William Marvin Groce	Violin	Selinsgrove
Helen Witherspoon Hamor	Piano	Milton
Eleanor Grant Kingsbury	Voice	Holyoke, Mass.
Geraldine Grace Lagerman	Piano, Organ	New Columbia
Grace Elizabeth Lavo	Supervisor, Voice	S. Williamsport
Phoebe Margaret Reinhart	Voice	Milton
Elma Elnora Reitz	Piano, Organ	Shamokin
Miriam Harp Stanger	Piano, Organ	Glassboro, N. J.
Camilla Thompson	Supervisor, Voice, Piano	Lewisburg
Miriam Van Valzah	Supervisor, Piano, Organ, Voice	Lewisburg
Elizabeth Montgomery Vincent	Supervisor, Voice	Northumberland
Helen Eva Waldner	Supervisor, Violin, Organ, Piano	Ashland
Mary Elizabeth Weeter	Voice	Sunbury
Gwendolyn Florence Wensel	Supervisor, Voice	Lewisburg

## THIRD YEAR

Abraham Louis Bailine	Piano	Lewisburg
Florence Warwick Beckworth	Piano	E. Lansdowne
Mary Phoebe Bray	Voice	Freeland
Evelyn Brubaker	Piano, Voice	Mifflinburg
Gladys Emrick	Piano, Voice	Shamokin
Mary Graham	Supervisor, Voice, Organ	Northumberland
Miriam Herr Haldeman	Voice	Malvern
Mary Grace Hazel	Piano	Boalsburg
Theodore Heysham, Jr.	Violin	Norristown
Meribel Ritter	Piano	Muncy
Alice Evans Rossiter	Organ	Norristown
Rachel Marie Steckel	Voice	Slatington
Nancy May Van Allen	Voice	Northumberland

## SECOND YEAR

Charlotte Evans Bosler	Piano	Johnstown
Pearl Botts	Piano	Milton
Ida Mae Coates	Organ, Piano, Voice	Peckville
Marian Gertrude Coe	Voice	Factoryville
John Stoughton Cregar	Violin	Plainfield, N. J.
Juaniata Curtis	Voice	Waymart
Roland Nelson Dutton	Voice	Buffalo, N. Y.
Vera Lorraine Eister	Violin	Lewisburg

Name	Course	Address
Gertrude Gardner	Piano	Carbondale
Jessie Langley	Piano	Milton
Marguerite Jane Mayers	Piano, Voice	Greensburg
Helen Esther McFarland	Violin	Watsontown
Estelle Fern McNeal	Violin	Nescopeck
Mildred Megahan	Voice	Williamsport
Hannah Metcalfe	Voice	Nanticoke
Kermit Levan Noll	Voice	Zion
Sara Josephine Pentz	Cello	Harrisburg
Vera Sackett	Piano	Downsville, N. Y.
Gertrude Samantha Sibel	Voice	Ligonier
Mary Seidel	Voice	Milton
Robert Hughes Smith	Violin	Knoxville
Sarah Elizabeth Spotts	Voice	Milton
Martha Catherine Swartz	Piano	Lewisburg
Helen Weidenhamer	Voice	Milton

## FIRST YEAR

Theodore Fairbanks Angus	Voice	Conemaugh
Elizabeth Lowry Bieber	Organ	Muncy
Frances Bieber	Piano	Muncy
John William Boggs	Voice	Milton
Rawle LeRoy Bower	Voice	Scranton
Harold Wesley Bover	Voice	Niconisco
Charles Irving Carpenter	Voice	Cambridge, Md.
Merl Greene Colvin	Piano	Forest City
James Lemoyne Cornely	Voice	Maderia
Lester Eugene Croft	Voice	Watsontown
Mary Elizabeth Cunningham	Voice	Vineland, N. J.
Frederic Bard Davies	Voice	Scranton
Lewis Kernick Davis	Voice	Belleville, N. J.
Ernest Bradley Decker	Voice	New Milford
Robert Emmett Dilworth	Voice	West Springfield
Clara Maye Ferguson	Piano	City Point, Va.
James Clyde Foose	Voice	Juniata
Joseph Harold Gamble	Voice	Buffalo, N. Y.
Reginald Frederick Gaylord	Voice	Aldenville
Henry Anson Glover, Jr.	Voice	Nichols, N. Y.
Elizabeth Claudia Gregg	Voice	Milton
Dorothy Griffith	Piano	Lewisburg
Hazel Lillian Hamblen	Piano	Sunbury
Herbert Edelman Heim	Violin	Lewisburg
George Theodore Henggi	Voice	Oakmont
Alexander Horoschak, Jr.	Violin	Perth Amboy, N. J.
Grace Elizabeth Housel	Voice	Northumberland
Walter Lewis Hufnagle	Voice	Catawissa
Clara Arlene Kimball	Voice	Vineland, N. J.
Darwin Dana Klinetob	Voice	Berwick
Sarah Elizabeth Kredel	Voice	Johnstown

Name	Course	Address
Carl Frederick Krause	Organ	Milton
Charles John Kushell, Jr.	Voice	Detroit, Mich.
Janet Elisabeth Lockwood	Piano	Greenwich, Conn.
Ethel Hazel Marks	Piano	Westwood, N. J.
Stanley Anderson McCaskey	Voice	Edgewood
David Lewis Miller	Voice	Juniata
Edwin Daniel Moll	Violin	Shamokin
Marjorie Josephine Rivenburg	Piano	Lewisburg
Anna Marion Outwater	Voice	Westfield, N. J.
Ruth Margaret Saul	Piano, Voice	Norristown
Arbutus Schuyler	Voice	Lewisburg
Lorenzo Scotti	Voice	Philadelphia
John Edwin Steely	Voice	Lewisburg
Mary Anne Fulton Stephens	Piano	Johnstown
Julia Szutowicz	Voice	Milton
Blanche Zohnes Thompson	Voice	Hightstown, N. J.
Nicholas Vaporelis	Violin	Milton

## PREPARATORY

Alta Rae Billmeyer	Piano	Milton
Virginia Clinger	Piano	Milton
Richard Arthur Colestock	Cello	Lewisburg
William Arthur Faus	Violin	Mifflinburg
Villia Emily Frock	Piano	Lewisburg
Florence Letta Gardner	Violin	Milton
Kenneth Frederick Herrold	Violin	Lewisburg
Eleanor Orwig Hopp	Piano	Mifflinburg
Grace Marsh	Piano	Milton
Ruth Moody	Piano	Milton
Sarah Moody	Piano	Milton
Virginia Moody	Voice	Milton
Helen Moore	Piano	Milton
Katharine Moore	Piano, Voice	Milton
Katherine Neuer	Piano	Milton
Dorothy Phillips Orwig	Piano	Northumberland
Dorothy Elizabeth Showalter	Piano	Gleniron
Bernadetta Six	Piano	Milton
Martha Geneva Thomas	Piano	Lewisburg
Ruth Jane Thomas	Violin	Lewisburg
Grace Evelyn Woods	Piano	Milton

## SUMMARY OF MUSIC SCHOOL STUDENTS

Fourth year	15
Third year	13
Second year	24
First year	48
Preparatory	21

Total	121
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## DIPLOMAS CONFERRED IN 1923

Name	Course	Address
Helen Bartlow	Voice	Sunbury
Mary Marjorie Brindel	Piano, Organ	Granville
Sara Jane Burke	Voice, Supervisor	Plymouth
Pearle Marguerite Chamberlin	Voice, Supervisor	Downingtown
Pearl Spaid Custer	Voice, Supervisor	Milton
Mildred Alice Hayden	Voice	Greensburg
Mary Hester Humphrey	Voice	Pittsburgh
Lawrence Myron Kimball	Voice	Vineland, N. J.
Caldwell Mathias	Voice	Milton
Emma Valeria Matz	Voice, Supervisor	Shillington
Jessie Weddell Pangburn	Voice	Lewisburg
Helen Marie Powell	Supervisor	Bivalve, N. J.
Elizabeth Avis Speakman	Voice	Williamsport
Katherine Miller Wagner	Supervisor	Lewisburg

DESIRABLE GIFTS

To persons willing to make contributions for Christian education, the following are suggested:

- (a) Professorships can be endowed for \$60,000 each.
- (b) Fellowships can be endowed for \$10,000 each.
- (c) Scholarships can be endowed by a gift of \$1,000 to \$5,000 each, the income to be given toward the expenses of the student. The income is estimated from the average income of the funds of the Institution, and is applied only in the year in which it falls due.
- (d) Additions can be made to the Loan Fund which has been established. The interest from this is loaned to students, the principal being kept intact.
- (e) A fund for the Retirement of Professors, who have completed the natural period of active service.

Each of these forms of beneficence will bear and perpetuate the name of the donor or of the person designated by him.

FORMS OF BEQUEST

To persons desiring to aid in increasing the efficiency of the University in the work of preparing young men and young women for usefulness, the following forms of bequest are recommended:

GENERAL

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of..... Dollars for general purposes, according to the Act of Assembly, incorporating the same;

A SPECIAL PURPOSE

I give and bequeath to the Bucknell University, at Lewisburg, Pennsylvania, the sum of ..... Dollars for the establishment of a professorship, fellowship, scholarship, loan fund, or retirement fund, to bear and perpetuate the name of ..... forever.

ANNUITIES

Gifts are accepted by the University upon which it agrees to pay an annuity during the life of the donor.



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UNIVERSITY OF ILLINOIS-URBANA



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